

The Journal

of the Michigan State Medical Society



Volume 51

September, 1952

Number 9

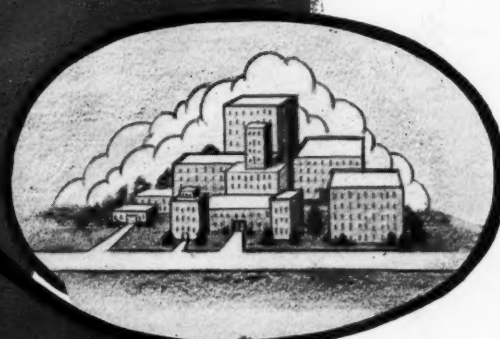
Arthritis and Rheumatism Number
A CO-OPERATIVE ENTERPRISE



VISITING NURSE



DOCTOR of MEDICINE

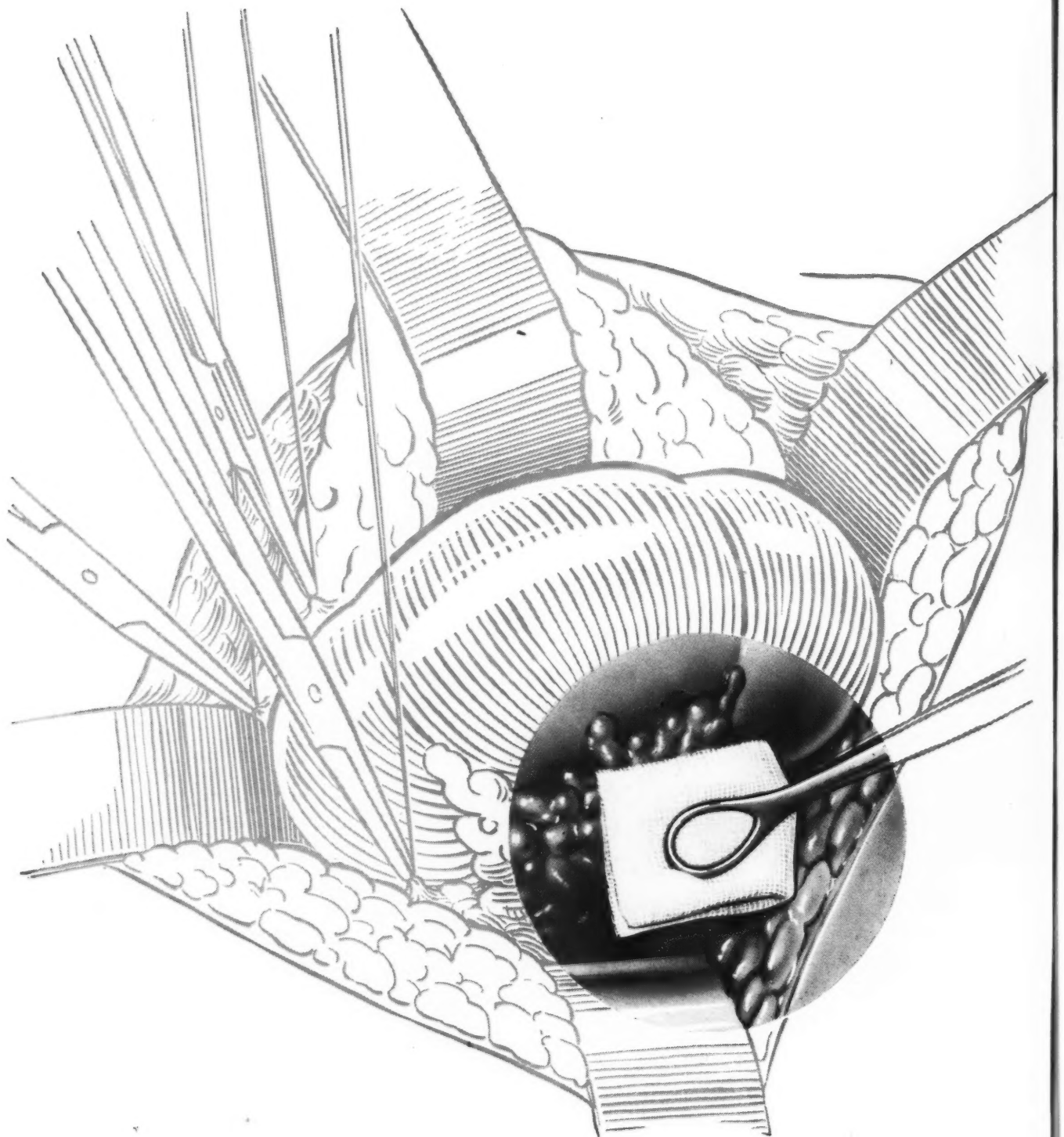


RESEARCH CENTERS

For Better Care of the Arthritic Patient at Home

clamp and ligate where you c

.....



VOLUME

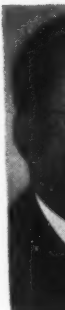
Con



I. H.



C. H.



M.

SEPT

THE JOURNAL of the Michigan State Medical Society

VOLUME 51

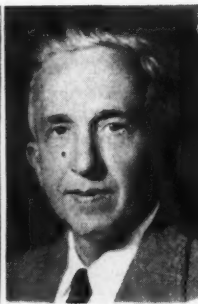
SEPTEMBER, 1952

NUMBER 9

Contributors to This Issue



I. F. DUFF



D. C. ENSIGN



H. T. EWALD



C. H. FRANTZ



E. GARDNER



J. J. LIGHTBODY



E. LIPKIN



E. A. PETERMAN



W. S. REVENO



W. D. ROBINSON



J. W. SIGLER

Table of Contents

Activities of the Arthritis and Rheumatism Foundation.	
Henry T. Ewald.....	1161
Arthritis Research in Michigan. III. Arthritis Foundation Expands Home-Care Program.	
J. J. Lightbody, M.D.....	1163
The Use of Massive-dose Cortisone in the Treatment of Rheumatoid Arthritis.	
John D. Chase, M.D., and James J. Lightbody M.D.	1167
Clinical Trial of 11- Ketoprogesterone in Rheumatoid Arthritis.	
Ivan F. Duff, M.D., William D. Robinson, M.D., and William Q. Wolfson, M.D.....	1176
Observations on the Use of Cortisone and Corticotropin in Rheumatoid Arthritis.	
Alvin E. Price, M.D., Wm. S. Reveno, M.D., J. J. Lightbody, M.D., E. C. Vonder Heide, M.D., H. A. Kashtan, M.D., and K. E. Corrigan, Ph.D.....	1183
Intra-articular Hydrocortisone in Treatment of Arthritis.	
Dwight C. Ensign, M.D., and John W. Sigler, M.D.....	1189
Corticotropin, Protamine Supplement and Plasma Fibrinogen Levels in Chronic Arthritis.	
Earl A. Peterman, M.D.....	1191
The Intra-articular Injection of Hydrocortisone (Compound F) in the Treatment of Selected Cases of Arthritic Disease.	
Hugo A. Freund, A.B., M.D.....	1199
The Conservative Management of Chronic Recurrent Low Back Pain.	
Charles H. Frantz, M.D.....	1201
Problems Relating to the Structure and Function of Joints.	
Ernest Gardner, M.D.....	1208
Application of Ultrasonics in Chronic Rheumatic Diseases.	
Max K. Newman, M.D., and Alma J. Murphy, Ph.D.....	1213
Protrusion of the Intervertebral Disk.	
Ezra Lipkin, M.D.....	1216
Investigation of Steroids in Postpartum Plasma.	
E. B. Smith, Ph.D., and Hugo A. Freund, A.B., M.D.....	1219
President's Page	1220
Editorial	1221
Annual Postgraduate Program for Graduates in Medicine	1226
Michigan's Department of Health.....	1228
In Memoriam.....	1230
Correspondence	1231
News Medical.....	1233
The Doctor's Library.....	1244
You and Your Business.....	1220
PR Accents Good Will.....	1228
Michigan's Rheumatic Fever Control Program Surges Ahead	1134
The Health Plank in Party Platforms.....	1138
Heart Beats	1142
Hospitalization at 65.....	1144
Cancer Comment	1146
Editorial Comment	1148
Military Medicine	1154
Civil Defense	1156

(Copyright, 1952, by Michigan State Medical Society)

THE JOURNAL

of the Michigan State Medical Society

VOLUME 51

SEPTEMBER, 1952

NUMBER 9

PUBLICATION COMMITTEE

F. H. DRUMMOND, M.D., <i>Chairman</i>	Kawkawlin
H. H. HISCOCK, M.D.....	Flint
C. A. PAUKSTIS, M.D.....	Ludington
G. B. SALTONSTALL, M.D.....	Charlevoix
G. W. SLAGLE, M.D.....	Battle Creek

Office of Publication
2642 University Avenue
Saint Paul 4, Minnesota

Editor

WILFRID HAUGHEY, M.D.
610 Post Bldg., Battle Creek, Michigan

Secretary and Business Manager of THE JOURNAL

L. FERNALD FOSTER, M.D.
Thorne Bldg., 919 Washington Ave.
Bay City, Michigan
Executive Director
WM. J. BURNS, LL.B.
606 Townsend Street, Lansing 15, Michigan

All communications relative to exchanges, books for review, manuscripts, should be addressed to Wilfrid Haughey M.D., 610 Post Bldg., Battle Creek, Michigan.

All communications regarding advertising and subscription should be addressed to Wm. J. Burns, 2642 University Avenue, Saint Paul 4, Minnesota, or 606 Townsend Street, Lansing 15, Michigan. Telephone 57125.

Copyright, 1952, by Michigan State Medical Society

Published monthly by the Michigan State Medical Society as its official journal at 2642 University Avenue, Saint Paul 4, Minnesota.

Entered at the post office at Saint Paul, Minnesota, as second class matter, May 7, 1930, under the Act of March 3, 1879.

Acceptance for mailing at special rate of postage provided for in Section 1103 Act of October 3, 1917, authorized August 7, 1918.

Yearly subscription rate, \$5.00; single copies, 50 cents. Additional postage; Canada, \$1.00 per year; Pan-American Union, \$2.50 per year; Foreign, \$2.50 per year.

PRINTED IN U.S.A.

OFFICERS OF THE SOCIETY

1951-52

President.....	OTTO O. BECK, M.D.....	Birmingham
President-Elect.....	R. J. HUBBELL, M.D.....	Kalamazoo
Secretary.....	L. FERNALD FOSTER, M.D.....	Bay City
Treasurer.....	WM. A. HYLAND, M.D.....	Grand Rapids
Speaker.....	R. H. BAKER, M.D.....	Pontiac
Vice Speaker.....	J. E. LIVESAY, M.D.....	Flint
Editor.....	WILFRID HAUGHEY, M.D.....	Battle Creek

THE COUNCIL

WILLIAM BROMME, M.D., *Chairman*, Detroit
L. W. HULL, M.D., *Vice Chairman*, Detroit
L. FERNALD FOSTER, M.D., *Secretary*, Bay City

District		Term Expires
L. W. HULL, M.D.....	1st.....	Detroit.....1956
R. S. BREAKEY, M.D.....	2nd.....	Lansing.....1955
G. W. SLAGLE, M.D.....	3rd.....	Battle Creek.....1955
RALPH W. SHOOK, M.D.....	4th.....	Kalamazoo.....1956
J. D. MILLER, M.D.....	5th.....	Grand Rapids.....1956
H. H. HISCOCK, M.D.....	6th.....	Flint.....1956
H. B. ZEMMER, M.D.....	7th.....	Lapeer.....1952
L. C. HARVIE, M.D.....	8th.....	Saginaw.....1952
G. B. SALTONSTALL, M.D.....	9th.....	Charlevoix.....1952
F. H. DRUMMOND, M.D.....	10th.....	Kawkawlin.....1952
C. A. PAUKSTIS, M.D.....	11th.....	Ludington.....1953
A. H. MILLER, M.D.....	12th.....	Gladstone.....1953
W. S. JONES, M.D.....	13th.....	Menominee.....1953
B. M. HARRIS, M.D.....	14th.....	Ypsilanti.....1954
D. BRUCE WILEY, M.D.....	15th.....	Utica.....1955
W. D. BARRETT, M.D.....	16th.....	Detroit.....1955
W. B. HARM, M.D.....	17th.....	Detroit.....1953
WILLIAM BROMME, M.D.....	18th.....	Detroit.....1954
OTTO O. BECK, M.D.....	President.....	Birmingham
R. J. HUBBELL, M.D.....	President-Elect.....	Kalamazoo
R. H. BAKER, M.D.....	Speaker.....	Pontiac
L. FERNALD FOSTER, M.D.....	Secretary.....	Bay City
WM. A. HYLAND, M.D.....	Treasurer.....	Grand Rapids
C. E. UMPHREY, M.D.....	Immediate Past President.....	Detroit

EXECUTIVE COMMITTEE OF THE COUNCIL

WILLIAM BROMME, M.D.....	Chairman
L. W. HULL, M.D.....	Vice Chairman
F. H. DRUMMOND, M.D.....	Chairman, Publication Committee
W. S. JONES, M.D.....	Chairman, Finance Committee
D. BRUCE WILEY, M.D.....	Chairman, County Societies Committee
R. H. BAKER, M.D.....	Speaker, House of Delegates
OTTO O. BECK, M.D.....	President
R. J. HUBBELL, M.D.....	President-Elect
L. FERNALD FOSTER, M.D.....	Secretary

SECTION OFFICERS

Medicine

D. I. Sugar, M.D.....	Detroit
<i>Chairman</i>	
D. R. Boyd, M.D.....	Muskegon
<i>Secretary</i>	

Surgery

F. P. Husted, M.D.....	Bay City
<i>Chairman</i>	
J. M. Wellman, M.D.....	Lansing
<i>Secretary</i>	

Gynecology and Obstetrics

L. C. Bosch, M.D.....	Grand Rapids
<i>Chairman</i>	
J. P. Ottaway, M.D.....	Detroit
<i>Secretary</i>	

Gastroenterology and Proctology

E. F. Sladek, M.D.....	Traverse City
<i>Chairman</i>	
R. L. Fitts, M.D.....	Grand Rapids
<i>Secretary</i>	

Delegates

W. D. Barrett, M.D., Detroit.....	1952
W. H. Huron, M.D., Iron Mountain.....	1952
R. L. Novy, M.D., Detroit.....	1952
R. A. Johnson, M.D., Detroit.....	1953
W. A. Hyland, M.D., Grand Rapids.....	1953
J. S. DeTar, M.D., Milan.....	1953

Radiology, Pathology, Anesthesiology

A. B. Stearns, M.D.....	Detroit 1
<i>Chairman (Anes.)</i>	
W. A. Stryker, M.D.....	Wyandotte
<i>Vice Chairman (Path.)</i>	
F. K. Wietersen, M.D.....	Birmingham
<i>Secretary (Rad.)</i>	

General Practice

E. M. Smith, M.D.....	Grand Rapids
<i>Chairman</i>	
C. J. Williams, M.D.....	Detroit
<i>Secretary</i>	

Ophthalmology and Otolaryngology

C. G. Wencke, M.D.....	Battle Creek
<i>Chairman (Oto.)</i>	
L. E. McCullough, M.D.....	Detroit
<i>Co-Chairman (Oph.)</i>	
F. A. Lamberson, M.D.....	Detroit
<i>Secretary (Oto.)</i>	
L. L. Loder, M.D.....	Muskegon
<i>Co-Secretary (Oph.)</i>	

DELEGATES TO A. M. A.



Pediatrics

H. L. French, M.D.....	Lansing
<i>Chairman</i>	
P. S. Bradshaw, M.D.....	Muskegon
<i>Secretary</i>	

Urology

R. A. Burhans, M.D.....	Lansing
<i>Chairman</i>	
William Bromme, M.D.....	Detroit
<i>Secretary</i>	

Public Health and Preventive Medicine

M. R. French, M.D.....	Coldwater
<i>Chairman</i>	
J. G. Molner, M.D.....	Detroit
<i>Secretary</i>	

Nervous and Mental Diseases

P. N. Brown, M.D.....	Northville
<i>Chairman</i>	
T. V. Hoagland, M.D.....	Detroit
<i>Secretary</i>	

Dermatology and Syphilology

J. R. Delaney, M.D.....	Detroit
<i>Chairman</i>	
C. J. Courville, M.D.....	Detroit
<i>Secretary</i>	

Alternates

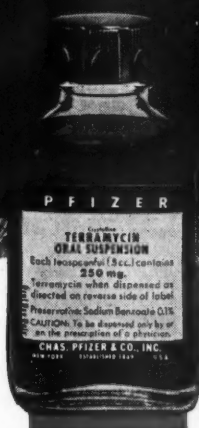
R. H. Denham, M.D., Grand Rapids.....	1952
C. I. Owen, M.D., Detroit.....	1952
E. F. Sladek, M.D., Traverse City.....	1953
E. D. Spalding, M.D., Detroit.....	1953
W. W. Babcock, M.D., Detroit.....	1953
E. C. Texter, M.D., Detroit.....	1953

Broad spectrum antibiotic therapy

NOW IN THE BEST
OF TASTE

CRYSTALLINE
Terramycin
oral suspension

(flavored)



Antibiotic Division
CHAS. PFIZER & CO., INC.
Brooklyn 6, N. Y.

world's largest producer of antibiotics

Committees of the Council, 1952-53

CONTACT COMMITTEE WITH UNIVERSITY OF MICHIGAN PRESIDENT

E. I. Carr, M.D., *Chairman*.....300 W. Ottawa, Lansing
R. J. Hubbell, M.D.....252 E. Lovell, Kalamazoo
L. Fernald Foster, M.D.....919 Washington, Bay City

LIAISON COMMITTEE WITH MICHIGAN STATE PHARMACEUTICAL ASSOCIATION

J. D. Miller, M.D., *Chairman*.....Metz Bldg., Grand Rapids
C. G. Clippert, M.D.....Grayling
C. W. Colwell, M.D.....706 Citizens Bank Bldg., Flint
E. G. Merritt, M.D.....10 Peterboro, Detroit
G. H. Rigerink, M.D.....1110 Am. National Bank, Kalamazoo

PERMANENT CONFERENCE COMMITTEE WITH MICHIGAN HOSPITAL ASSOCIATION AND MICHIGAN NURSING CENTER ASSOCIATION

E. G. Merritt, M.D., *Chairman*.....10 Peterboro, Detroit
C. G. Clippert, M.D.....Grayling
J. E. Livesay, M.D.....Mott Foundation Bldg., Flint
J. D. Miller, M.D.....Metz Bldg., Grand Rapids
G. J. Moriarty, M.D.....3001 W. Grand Blvd., Detroit
Sarah S. Schotten, M.D.....954 Maccabees Bldg., Detroit
E. M. Vardon, M.D.....12897 Woodward Ave., Detroit
J. A. Witter, M.D.....344 Glendale Ave., Detroit

SPECIAL COMMITTEE ON EDUCATION

L. W. Hull, M.D., *Chairman*.....1701 David Whitney Bldg., Detroit
L. Fernald Foster, M.D.....919 Washington, Bay City
W. S. Jones, M.D.....1146 Tenth Ave., Menominee
Arch Walls, M.D.....17201 W. McNichols Rd., Detroit

ADVISORY COMMITTEE TO BUREAU OF MATERNAL AND CHILD HEALTH

Frank Van Schoick, M.D., *Chairman*.....419 W. High, Jackson
C. F. Brunk, M.D.....7815 E. Jefferson, Detroit
A. M. Campbell, M.D.....Metz Bldg., Grand Rapids
H. A. Furlong, M.D.....926 Riker Bldg., Pontiac
W. G. Hoebeke, M.D.....420 John, Kalamazoo
R. B. Kennedy, M.D.....2108 David Broderick Tower, Detroit
W. R. Klunzinger, M.D.....420 W. Ottawa, Lansing
S. L. Loupee, M.D.....Dowagiac
R. H. Pino, M.D.....208 David Whitney Bldg., Detroit
L. P. Sonda, M.D.....344 David Whitney Bldg., Detroit

COMMITTEE ON AWARDS

L. Fernald Foster, M.D., *Chairman*.....919 Washington, Bay City
Wilfrid Haughey, M.D.....610 Post Bldg., Battle Creek
R. J. Hubbell, M.D.....252 E. Lovell, Kalamazoo

COMMITTEE ON BLOOD BANKS

D. H. Kaump, M.D., *Chairman*.....Providence Hospital, Detroit
W. B. Cooksey, M.D.....62 W. Kirby, Detroit
R. H. Holmes, M.D.....Hackley Union Bank Bldg., Muskegon
A. A. Humphrey, M.D.....914 Security Bank Bldg., Battle Creek
Hazel R. Prentice, M.D.....458 W. South, Kalamazoo

COMMITTEE ON COURSES IN MEDICAL ECONOMICS

E. F. Sladek, M.D., *Chairman*.....Traverse City
L. Fernald Foster, M.D.....919 Washington, Bay City
E. A. Osius, M.D.....901 David Whitney Bldg., Detroit
J. R. Rodger, M.D.....Bellaire
R. W. Teed, M.D.....215A S. Main, Ann Arbor

COMMITTEE ON ARBITRATION (re Uniform Fee Schedule)

T. H. Hunt, M.D., *Chairman*.....19431 Van Dyke Ave., Detroit 34
A. E. Catherwood, M.D.....1553 Woodward Ave., Detroit
C. K. Hasley, M.D.....1553 Woodward Ave., Detroit
I. S. Schembeck, M.D.....1553 Woodward Ave., Detroit
Arch Walls, M.D.....17201 W. McNichols, Detroit
Mr. J. W. Castellucci, Adviser.....234 State St., Detroit

JOINT COMMITTEE ON STUDY OF MEDICAL PRACTICE ACT

W. B. Harm, M.D., *Chairman*.....5884 W. Vernor Highway, Detroit
L. A. Drolett, M.D.....Prudden Bldg., Lansing
Mr. J. Joseph Herbert.....127 S. Cedar, Manistique
J. E. Livesay, M.D.....Mott Foundation Bldg., Flint
J. D. Miller, M.D.....Metz Bldg., Grand Rapids

COMMITTEE ON EMERGENCY MEDICAL SERVICE

W. H. Gordon, M.D., *Chairman*.....1102 David Whitney Bldg., Detroit
W. H. Alexander, M.D.....Iron Mountain
C. P. Anderson, M.D.....334 Bates, Detroit
A. G. Baker, M.D.....Michigan Department of Health, Lansing
A. C. Furstenberg, M.D.....U. of M. Medical School, Ann Arbor
R. F. Hague, M.D.....210 E. Court, Flint
S. W. Hartwell, M.D.....452 W. Western Ave., Muskegon
Louis Jaffe, M.D.....10 Witherell, Detroit
D. H. Kaump, M.D.....Providence Hospital, Detroit
M. L. Lichter, M.D.....Melvindale
J. A. Ramsey, M.D.....Alpena
G. H. Scott, Ph.D.....Wayne Univ. College of Medicine, Detroit

SUBCOMMITTEE ON STANDARDIZED MEDICAL CARE FOR CASUALTIES IN ATTACK

Louis Jaffe, M.D.....10 Witherell, Detroit
R. F. Hague, M.D.....210 E. Court, Flint
D. H. Kaump, M.D.....Providence Hospital, Detroit

SUBCOMMITTEE ON PLANNING AND ORGANIZATION

M. L. Lichter, M.D., *Chairman*.....2900 Oakwood Blvd., Melvindale
C. P. Anderson, M.D.....334 Bates, Detroit
A. G. Baker, M.D.....Michigan Dept. of Health, Lansing
G. J. Curry, M.D.....346 S. Saginaw St., Flint
R. F. Hague, M.D.....210 E. Court, Flint
J. A. Ramsey, M.D.....Alpena
T. E. Schmidt, M.D.....180 W. Michigan Ave., Jackson

COMMITTEE ON RURAL MEDICAL SERVICE

E. S. Oldham, M.D., *Chairman*.....Breckenridge
W. B. Crane, M.D.....420 S. Rose, Kalamazoo
J. H. Fyvie, M.D.....Manistique
O. R. MacKenzie, M.D.....128 Common, Walled Lake
W. H. Mast, M.D.....Tecumseh
C. E. Merritt, M.D.....Manton
E. S. Parmenter, M.D.....Alpena
J. R. Rodger, M.D.....Bellaire
F. R. Smith, M.D.....Lake City
W. F. Strong, M.D.....Ontonagon
O. D. Stryker, M.D.....Macomb County Bldg., Mt. Clemens
H. B. Zemmer, M.D.....Lapeer

ADVISORY COMMITTEE TO THE CANCER FOUNDATION OF THE MICHIGAN FEDERATION OF BUSINESS AND PROFESSIONAL WOMEN'S CLUBS

E. I. Carr, M.D., *Chairman*.....300 W. Ottawa, Lansing
C. H. Keene, M.D.....Kaiser-Frazer Corp., Ypsilanti
H. M. Nelson, M.D.....3001 W. Grand Blvd., Detroit

SPECIAL COMMITTEE TO MEET WITH MICHIGAN SOCIAL WELFARE COMMISSION

G. W. Slagle, M.D., *Chairman*.....140 N.E. Capitol, Battle Creek
Wilfrid Haughey, M.D.....610 Post Bldg., Battle Creek
R. J. Hubbell, M.D.....252 E. Lovell, Kalamazoo
L. G. Christian, M.D., Ex officio Representing Welfare Commission.....108 E. St. Joseph, Lansing

COMMITTEE ON ATOMIC AND ALLIED PROCEDURES

A. A. Humphrey, M.D., *Chairman*.....914 Security Bank Bldg., Battle Creek
H. F. Becker, M.D.....Route 3, Box 303A, Battle Creek
O. A. Brines, M.D.....1512 St. Antoine, Detroit
J. E. Cole, M.D.....344 Glendale Ave., Detroit
K. H. Corrigan, Ph.D.....Harper Hospital, Detroit
Dr. J. J. Grebe.....Dow Chemical Co., Midland
L. E. Holly, M.D.....817 N. Second, Muskegon
Traian Leucutia, M.D.....Harper Hospital, Detroit
H. B. Lewis, Ph.D.....University of Michigan, Ann Arbor
M. L. Lichter, M.D.....2900 Oakwood Blvd., Melvindale
A. B. McGraw, M.D.....2799 W. Grand Blvd., Detroit
Dr. W. L. Mallmann.....Michigan State College, E. Lansing
W. J. Nungester, M.D.....University of Michigan, Ann Arbor
Dr. L. L. Quill.....Michigan State College, E. Lansing

SUBCOMMITTEE ON MEDICAL USES OF ATOMIC ENERGY

L. E. Holly, M.D., *Chairman*.....817 N. Second, Muskegon

Committees of the Council

SUB-COMMITTEE ON INDUSTRIAL USES AND HAZARDS OF ATOMIC ENERGY

K. H. Corrigan, Ph.D., *Chairman*.....Harper Hospital, Detroit

SUB-COMMITTEE ON MEDICAL AND TECHNICAL DEFENSE IN MODERN SCIENTIFIC WARFARE

A. A. Humphrey, M.D., *Chairman*.....914 Security Bank Bldg., Battle Creek

MEDICAL PROCUREMENT ADVISORY COMMITTEE

C. I. Owen, M.D., *Chairman*.....Grace Hospital, Detroit
M. J. Capron, M.D.65 W. Michigan, Battle Creek
C. H. Frantz, M.D.1810 Wealthy St. S.E., Grand Rapids
W. H. Huron, M.D.Iron Mountain
E. C. Miller, M.D.101 W. John, Bay City
G. C. Penberthy, M.D.1515 David Whitney Bldg., Detroit
J. R. Rodger, M.D.Bellaire
H. H. Stryker, M.D.Borgess Hospital, Kalamazoo

SPECIAL COMMITTEE TO MEET WITH THE UNDERWRITERS ASSOCIATION OF MICHIGAN

Ralph Wadley, M.D., *Chairman*.....333 Seymour St., Lansing
L. Fernald Foster, M.D.919 Washington, Bay City
J. S. Rozan, M.D.Bank of Lansing Bldg., Lansing
Mr. H. W. Brennenman.....606 Townsend, Lansing

LIAISON COMMITTEE WITH MICHIGAN VETERANS ORGANIZATIONS

William Bromme, M.D., *Chairman*.....318 Professional Bldg., Detroit
R. H. Baker, M.D.1110 Peoples Bank Bldg., Pontiac
G. W. Slagle, M.D.140 N.E. Capitol, Battle Creek
Mr. J. W. Castellucci (Advisor).....Michigan Medical Service, Washington Blvd. Bldg., Detroit

COMMITTEE TO STUDY "LITTLE HOOVER" COMMISSION REPORT

J. E. Livesay, M.D., *Chairman*.....619 Mott Foundation Bldg., Flint
O. J. Johnson, M.D.207 N. Walnut, Bay City
J. G. Molner, M.D.334 Bates, Detroit
H. Marvin Pollard, M.D.University Hospital, Ann Arbor
S. B. Winslow, M.D.612 Post Building, Battle Creek

COMMITTEE ON STUDY OF GROUP MALPRACTICE INSURANCE

W. S. Jones, M.D., *Chairman*.....Menominee
L. Fernald Foster, M.D.919 Washington, Bay City
Mr. J. Joseph Herbert.....127 S. Cedar, Manistique

LIAISON COMMITTEE WITH MICHIGAN MEDICAL SERVICE

William Bromme, M.D., *Chairman*.....10 Peterboro, Detroit
R. S. Breakey, M.D.1211 Bank of Lansing Bldg., Lansing
L. C. Carpenter, M.D.Metz Building, Grand Rapids
B. M. Harris, M.D.220 Pearl Street, Ypsilanti
W. H. Huron, M.D.107 E. "A" Street, Iron Mountain
G. W. Slagle, M.D.1206 Security Bank Bldg., Battle Creek
J. M. Wellman, M.D.301 Seymour, Lansing
D. B. Wiley, M.D.45310 Van Dyke, Utica

HOSPITAL RELATIONS COMMITTEE

L. W. Hull, M.D., *Chairman*.....1701 David Whitney Bldg., Detroit
A. H. Kretchmar, M.D.608 First National Bldg., Flint
J. W. Logie, M.D.Metz Building, Grand Rapids

W. S. Reveno, M.D.951 Fisher Building, Detroit
C. E. Umphrey, M.D.13331 Livernois, Detroit
Ralph Wadley, M.D.333 Seymour Street, Lansing

COMMITTEE ON MODEL CODE FOR M.D. ANNOUNCEMENTS

D. B. Wiley, M.D., *Chairman*.....Utica
W. D. Barrett, M.D.1553 Woodward Ave., Detroit
J. E. Livesay, M.D.Mott Foundation Bldg., Flint

COMMITTEE TO CO-OPERATE WITH MICHIGAN HEALTH COUNCIL RE PERIODIC HEALTH APPRAISAL

P. S. Barker, M.D.University Hospital, Ann Arbor
J. G. Bielawski, M.D.5119 St. Lawrence Ave., Detroit
W. B. Cooksey, M.D.62 W. Kirby, Detroit
J. S. DeTar, M.D.Milan
D. C. Ensign, M.D.Henry Ford Hospital, Detroit
W. A. Irvin, M.D.Providence Hospital, Detroit
W. M. LeFevre, M.D.289 W. Western Avenue, Muskegon
J. J. Lightbody, M.D.501 David Whitney Bldg., Detroit
E. F. Lutz, M.D.Gen. Motors Bldg., Detroit
O. T. Mallory, M.D.Univ. Hosp., Ann Arbor
H. M. Pollard, M.D.Univ. Hosp., Ann Arbor
H. W. Porter, M.D.505 Wildwood Avenue, Jackson
F. L. Rector, M.D.606 Townsend Street, Lansing
W. S. Reveno, M.D.951 Fisher Bldg., Detroit
R. F. Salot, M.D.713 Monitor-Leader Bldg., Mt. Clemens
E. F. Sladek, M.D.123 E. Front St., Traverse City

BEAUMONT MEMORIAL RESTORATION COMMITTEE

A. H. Whittaker, M.D., *Chairman*.....1427 E. Jefferson, Detroit
L. J. Hirschman, M.D.2619 Munson Ave., Traverse City
S. W. Hoobler, M.D.1313 E. Ann St., Ann Arbor
W. A. Hyland, M.D.Metz Bldg., Grand Rapids
W. S. Jones, M.D.1146 Tenth Ave., Menominee
Mr. H. J. Loynd.....Parke, Davis & Co., Detroit
Lawrence Reynolds, M.D.10 Peterboro, Detroit

Standing Committees

FINANCE COMMITTEE

W. S. Jones, M.D., *Chairman*.....Menominee
W. D. Barrett, M.D.Detroit
L. W. Hull, M.D.Detroit
A. H. Miller, M.D.Gladstone
J. D. Miller, M.D.Grand Rapids
H. B. Zemmer, M.D.Lapeer

PUBLICATION COMMITTEE

F. H. Drummond, M.D., *Chairman*.....Kawkawlin
H. H. Hiscock, M.D.Flint
C. A. Paukstis, M.D.Ludington
G. B. Saltonstall, M.D.Charlevoix
G. W. Slagle, M.D.Battle Creek

COUNTY SOCIETIES COMMITTEE

D. B. Wiley, M.D., *Chairman*.....Utica
R. S. Breakey, M.D.Lansing
W. B. Harm, M.D.Detroit
B. M. Harris, M.D.Ypsilanti
L. C. Harvie, M.D.Saginaw
Ralph W. Shook, M.D.Kalamazoo

For Men, Women
and Children
501 Mutual Bldg.
28 W. Adams

HACK'S FOOT NOTES

Shoe Information for the Profession

PUBLISHED BY THE HACK SHOE CO.

Children's Branch
19170 Livernois
North of 7 Mile

THE HUMAN FOOT HAS BECOME THE TARGET OF UNBELIEVABLE ABUSE

Flat, unyielding surfaces, circumscribed standing at work, grotesque and ill-fitting footwear, all contribute to its imbalance if not eventual breakdown.

At least, feet can be protected by fitting to correct shoes.**

**HACK SHOES

You and Your Business

HIGHLIGHTS OF MID-SUMMER SESSION OF THE COUNCIL

July 13-14-15, 1952

One hundred five items were considered by The Council at its Mid-Summer Session. Chief in importance were:

- Monthly financial reports, as well as the semi-annual balance sheet covering all MSMS funds, were presented, studied and approved. The quarterly and semi-annual reports of the Cancer Control Committee were studied and approved. Bills payable were inspected and payment was authorized.
- Cancer Manual. Michigan Health Commissioner A. E. Heustis, M.D., stated that the State Health Department would finance the publication of 5,000 copies of the new Cancer Manual "A Story of Cancer for High Schools" in the sum of \$1,635.00; The Council ordered that full credit be given in the brochure to the Michigan Department of Health and to Commissioner A. E. Heustis, M.D., and to the American Cancer Society, Michigan Division.
- Request of Michigan State Board of Registration in Medicine for more finances from fees increased by 1952 Legislative Act: The Council voted to offer its co-operation to the Michigan State Board of Registration in Medicine through a Liaison Committee when the appointment of same is requested by the Board.
- Beaumont Memorial Restoration. President Otto O. Beck, M.D., reported that contributions to transform the old American Fur Company store on Mackinac Island into a memorial to Dr. Beaumont now totaled \$20,154.00, representing more than half the goal of \$40,000.

The Finance Committee through Chairman W. S. Jones, M.D., recommended that a loan, not to exceed \$20,000, be made from MSMS funds to begin work on the Beaumont Memorial Restoration; this recommendation was approved by The Council.

A proposed agreement between the Michigan State Medical Society and the Mackinac Island State Park Commission was presented; this document authorizes MSMS to restore the Beaumont Memorial, having complete control until it turns over the building to the State Park Commission which agrees to maintain it in perpetuity; this contract as drafted by Legal Counsel J. Joseph Herbert and approved by the Beaumont Memorial Restoration Committee, was approved by The Council. A Working Committee was appointed: W. S. Jones, M.D., Menominee, Chairman; Otto O. Beck, M.D., Birmingham; State Treasurer D. Hale Brake, Lansing; William Bromme, M.D., Detroit; State Park Commission

Chairman W. F. Doyle, Mackinac Island; Legal Counsel J. Joseph Herbert, Manistique; State Architect A. N. Languis, Lansing; G. B. Saltonstall, M.D., Charlevoix; and L. Fernald Foster, M.D., Bay City, as Secretary.

The Council Chairman was authorized to appoint a Beaumont Memorial Consultative Committee, representative of the medical profession and of the public.

- The Treasurer's Report concerning bonds of the Michigan State Medical Society was presented and approved. The Council designated the Michigan National Bank, Grand Rapids Office, as the depository for the MSMS bonds and funds in the account of the Treasurer.
- Annual Session of The Council. The dates of January 29-30-31, 1953, at the Sheraton-Cadillac Hotel, Detroit, were selected for this Session; the MSMS Public Relations Conference is to be held Sunday, February 1, 1953, at the Sheraton-Cadillac Hotel.
- Testimonial Dinner in honor of Otto O. Beck, M.D., Birmingham, sponsored by the Oakland County Medical Society on September 3: official MSMS representatives were selected to attend this meeting in honor of Dr. Beck, President of the Michigan State Medical Society.
- AMA Clinical Session in Detroit, 1956. To commemorate the centennial of an AMA meeting in Detroit in 1856, The Council voted to invite the AMA to hold its Clinical Session (December) in Detroit in 1956.
- Medical Advisory Committee to Michigan Hospital Service. A request from M.H.S. (Blue Cross) that MSMS appoint a Medical Advisory Committee to set up the duties and be advisor to Harry F. Becker, M.D., of Battle Creek, Director of the newly-created Physician Relationship Division, resulted in the appointment of a study committee to report to The Council on September 21, 1952: W. S. Reveno, M.D., Chairman; Otto O. Beck, M.D., E. C. Baumgarten, M.D., William Bromme, M.D., R. L. Novy, M.D., D. R. Smith, M.D., W. M. LeFevre, M.D., J. E. Livesay, M.D., J. D. Miller, M.D., R. W. Shook, M.D., and L. Fernald Foster, M.D., as Secretary.
- Lilly vs. Internal Revenue Service. The Legal Counsel reported that the U. S. Supreme Court had reversed the Circuit Court of Appeals in this case re rebates on eyeglass purchases on the grounds that such a rebate is a deductible item because it is not something specifically prohibited by law; (in Michigan the penal law specifically prohibits fee-splitting, so rebates may not be deductible in this state).

(Continued on Page 1122)



Salt is
what
makes
things
taste bad
when it
isn't in
them.*

Most people find foods unappealing and insipid without salt. Therefore, when salt restriction is indicated, the patient must be impressed with the importance of a salt-free diet and must adhere faithfully to a rigid regimen. "With the development of such preparations as Neocurtasal . . . the problem of palatability and a salty taste has been fairly well solved . . ."¹

Neocurtasal[®]

"... trustworthy nonsodium-containing salt substitute"²

—lends the desired salty flavor to foodstuffs, and can be used in all salt-free and low sodium diets.

CONSTITUENTS: Potassium chloride, ammonium chloride, potassium formate, calcium formate, magnesium citrate and starch.

and
NEOCURTASAL
Iodized

(contains
potassium iodide 0.01%)

Neocurtasal, trademark reg. U. S. & Canada.

Neocurtasal looks and pours like table salt
and may be used in the same manner.

Both available in 2 oz. shakers and 8 oz. bottles.

Winthrop-Stearns INC.
NEW YORK 18, N. Y. WINDSOR, ONT.

1. Merryman, M. P.: The Use of the Low Sodium Diet.
South Dakota Jour. Med. & Pharm., 2:57, Feb., 1949.
2. Heller, E. M.: The Treatment of Essential Hypertension.
Canad. Med. Assn. Jour., 61:293, Sept., 1949.

*Author unidentified. From Mencken, H. L.: *A New Dictionary of Quotations*.
New York, Alfred A. Knopf, 1942, p. 1057.

HIGHLIGHTS OF THE COUNCIL

(Continued from Page 1120)

- Public Relations Counsel H. W. Brenneman reported that publicity emphasizing scientific advances in medicine made by *doctors of medicine* would be featured in releases beginning next autumn. A 14-point program of such publicity was presented and approved.
- Supporting Membership in World Medical Association, for the year 1952, was authorized.
- The Annual Report of The Council (consisting of eleven closely typewritten legal-size pages) was presented, amended slightly, and ordered published in the Handbook for Delegates.
- Annual joint meeting with Michigan Crippled Children Commission resulted in discussion of (a) decreased legislative appropriations for medical care and treatment of afflicted children; (b) orthopedic field clinics for cerebral palsy cases; (c) wide variation in county fee schedules for care of afflicted children; (d) Department of Administration's amendment re pro-rata payment.
- Group health and accident insurance program for MSMS members: the findings of the Special Study Committee were ordered held for further discussion by The Council at its September 21 meeting in Detroit, with interim studies to be continued by the Committee.
- Annual Reports of all MSMS Committees were presented and referred to the MSMS House of Delegates.
- The monthly progress reports of the Rheumatic Fever Control Co-ordinator and of the Legal Counsel were presented and approved.
- Matters of mutual interest were presented by Michigan Health Commissioner A. E. Heustis, M.D., Lansing.
- The annual joint meeting with the Michigan Health Council was held and the "Mid-year Review of Activities and Progress of the MHC" was presented by seven of its officers and staff.
- The annual joint meeting with the Michigan Hospital Association was held with six of its officers being present to discuss four matters of mutual interest.
- JOURNAL covers and content for Numbers from September, 1952, to and including December, 1953, were presented by Editor Wilfrid Haughey, M.D., and approved by The Council.
- Committee reports were given consideration as follows: (a) Postgraduate Medical Education Committee, meeting of June 19; (b) Committee on Iodized Salt, meeting of June 24; (c) 1953 Michigan Clinical Institute Committee on Arrangements, meeting of June 25; (e) Rheumatic Fever Control Committee, meeting of July 14; (e) Beaumont Memorial Committee, meeting of July 14; (f) Committee on Arbitration (re Uniform Fee Schedule for Governmental Agen-

cies), meeting of July 14; (g) Medical Advisory Committee to Michigan Hospital Service (Blue Cross), meeting of July 15.

REAPPORTIONMENT

Vote "NO" on No. 2—Vote "YES" on No. 3.

How you vote in the November 4 General Election on the two proposals to reapportion the Michigan Legislature will determine how you will be governed in this State in the years to come.

Appearing as Proposal No. 3 on the ballot is the reapportionment proposition which will give you **fair representation** in the Legislature. This proposal is sponsored by the Michigan Committee for a Balanced Legislature—a committee of farm, business and professional people.

Proposal No. 3 gives assurance that everyone—citizens and occupational interests throughout the state—will have equal voice in our state government.

VOTE "YES" ON PROPOSAL NO. 3.

Proposal No. 2 is sponsored by the Michigan Committee for Representative Government—composed of liberal groups who seek to control the Legislature by concentrating power in four large Michigan counties.

The proposal receiving the largest number of votes will be the one to amend the Constitution. **Be sure to cast your ballot for both propositions.**

VOTE "NO" ON NO. 2—VOTE "YES" ON NO. 3.

Proposal No. 2	Yes <input type="checkbox"/>	NO <input type="checkbox"/>
Proposal No. 3	YES <input type="checkbox"/>	No <input type="checkbox"/>

Vote on BOTH Propositions

MORE PR MEN AT WORK IN MEDICAL FIELD

AMA PR Director Leo Brown reports that according to two recent surveys, more state medical associations are hiring trained lay personnel to carry out public relations programs than ever before.

A study conducted by the West Virginia State Medical Association revealed that fifteen states now employ a full-time PR director or consultant. Executive secretaries handle public relations activities in twenty-nine other states. With twenty-five listing separate PR budgets, the average public relations expenditure is approximately \$20,330 annually.

In another survey carried out by the AMA it was learned that eight state societies now employ field representatives to implement their programs among the counties. This study showed that seven other states employ half-time field men and several others are considering hiring men to fill similar positions. The survey indicated that these field men are considered valuable additions to the state society staffs because they build a closer working relationship between the state organizations and the county societies.

(Continued on Page 1124)

Camels
lead all
other brands
by billions



(Continued from Page 1122)

AMA FELLOWSHIP ABOLISHED

The AMA House of Delegates in June, 1952, officially abolished Fellowships in the Association. Provision has been made for service, affiliate, and honorary fellowships to be incorporated in the membership classification.

TRIBUTES TO MEDICAL PROFESSION

"Let your light shine" is good PR advice—and two electric companies recently added to the gleam of the medical profession by spotlighting the doctor and offering tributes to the medical man.

In April the Pennsylvania Power & Light Company carried an advertisement in the *Allentown Evening Chronicle and Morning Call* complimenting the *Lehigh County Medical Society on its 100th anniversary*. Beneath an operating room scene was this caption: "Who would you want to guide the scalpel at this critical moment?" In the ad copy the public was urged to "stop and think about whose hand you want to guide the scalpel when your life is at stake," when certain groups argue for socialized medicine.

The Pennsylvania Power & Light Company wrote all Lehigh County physicians telling them about the ad and pointing out that power companies are allies in the continuing fight to ward off socialism. In the Company's annual report the operating room scene was reproduced in color and in the cutline hailing medical progress was this statement: "Our industry is proud to have had a part in these unparallel accomplishments."

Throughout 1952 the X-Ray Department of *General Electric* is carrying a series of advertisements in "Newsweek" magazine paying tribute to physicians and proudly identifying the Company with medical progress. In a letter to all county public relations chairmen describing the GE series, Dr. Allen W. Cowley, Public Relations Chairman of the Pennsylvania State Medical Society, suggested ways in which doctors could express their appreciation for the General Electric tribute.

FELLOWSHIPS FOR BASIC RESEARCH IN ARTHRITIS

The Arthritis and Rheumatism Foundation is offering to qualified individuals research fellowships in the basic sciences related to arthritis.

Fellowships will be granted on both the predoctoral and postdoctoral levels, and will run for one year with prospect of renewal.

The predoctoral fellowships will range from \$1,500 to \$3,000 per annum depending on the family responsibilities of the fellow, and the postdoctoral fellowships will range from \$3,000 to \$6,000 on the same basis.

The deadline for applications is November 1, 1952. Applications will be reviewed and awards made by February 15, 1953.

For information and application forms, address the Medical Director, The Arthritis and Rheumatism Foundation, 23 West 45th Street, New York 36, N. Y.

MEDICAL MEETINGS AND CLINIC DAYS

A list of known medical meetings and clinic days, sponsored by county medical societies and other physicians' groups in Michigan, follows:

1952

- | | |
|------------|---|
| Oct. 8 | Clara Elizabeth Fund—Genesee County Medical Society—Lectures of 1952...Flint |
| Oct. 9 | Fourth Michigan Cancer Conference
Kellogg Center, East Lansing |
| Nov. 17-18 | Wayne County and Michigan Academies of General Practice
Kellogg Center, East Lansing |
| Autumn | MSMS Postgraduate Extramural Courses
State-wide |

1953

- | | |
|------------|--|
| Jan. 16-17 | Sixth Annual Michigan Rural Health Conference
Kellogg Center, East Lansing |
| Mar. 10 | MICHIGAN INDUSTRIAL HEALTH DAY...Sheraton-Cadillac Hotel, Detroit |
| Mar. 11-13 | MICHIGAN CLINICAL INSTITUTE
Sheraton-Cadillac Hotel, Detroit
Complete program will be published in the December JMSMS. Plan now to attend and secure your room reservations by writing Robert M. Buckley, Secretary, Committee on Hotels, Michigan Clinical Institute, c/o Sheraton-Cadillac Hotel, Detroit. |
| April 9 | Genesee County Medical Society 8th Annual Cancer Day.....Flint |
| May 13 | Annual Clinic Day and Reunion of Wayne University College of Medicine
Hotel Fort Shelby, Detroit |

Additions to this list of meetings are invited by the Editor of JMSMS, in order to make this monthly announcement complete and accurate.

ADEQUACY OF RESERVES FOR JOB INSURANCE

A measure of adequacy of reserves at the end of 1951 reveals that at one extreme Iowa, Colorado, and New Mexico could meet average annual postwar costs for more than twenty years without collecting another cent in contributions or earning any additional interest. At the other extreme, funds available for benefits in Rhode Island were equal to only 1.2 years of postwar costs, and in Massachusetts to only 1.7 years.

(Continued on Page 1126)

Schering

CORTOGEN[®]

ACETATE

for

CORTISONE

therapy

C
O
R
T
I
S
O
N
E

The name Schering has come to stand for pioneering research and leadership in steroid hormone chemistry. Now Schering adds this new important product to its steroid line—available in ample amount to meet all your cortisone needs.

Available as 25 mg. tablets, bottles of 30. For complete information write to our Medical Service Department.

Schering

CORPORATION • BLOOMFIELD, N. J.

(Continued from Page 1124)

GREEK MEDICINAL HERB GROWERS

Among the rites was the address of a prayer to Jupiter that the drug might be effective, and that was indicated by the sign R. Today every physician begins every prescription he writes with that sign to Jupiter, R, praying the remedy may cure the disease.—*Florida Grower*, August, 1952.

URGES HOLIDAY FOR HOSPITALS ON ELECTION DAY

In a recent letter to AMA President Louis H. Bauer, Dr. John V. Sullivan, Akron, proposed an idea which merits some serious thought. He suggested that clinics and operating schedules be placed on a holiday status on election day in November.

Dr. Sullivan said that many doctors don't go to the polls because of heavy schedules at the hospitals.

"I would like to suggest," he said, "that presidential election day this year be a legal holiday for every hospital in the nation. This would involve suspension of clinics and operating schedules. What more important holiday is there during the year?"

GOVERNMENT PATERNALISM HELD MENACE

"Big government is a serious threat to the liberties of this country," The First National Bank of Boston declared in the current issue of its New England Letter. "Historical evidence clearly shows," the bank declared, "that government paternalism is the greatest internal menace, since it undermines the wealth-creating powers of the people and destroys personal initiative, which has been responsible for our unparalleled economic and social progress. The American people should awaken from their lethargy and not be jockeyed by siren voices into trading freedom for so-called security.

"Since 1930, government employment of all kinds has increased at four times, and federal civilian employment at eleven times the rate of increase in the total population. All told, there are about 6.8 million civilian workers on state and Federal pay rolls. This is equivalent to nearly one government worker for every 6.6 families in the country, as against a ratio of about one to 10 in 1929.

THE HIDDEN TAXES ARE EVEN WORSE

The Tax Foundation reports that a hypothetical family of 3.2 persons having an income of \$70 a week, and who's income tax is about \$300 averages \$798 in hidden taxes. At the \$15,000 level, the same family pays about \$2,600 in income taxes and \$4,000 in hidden taxes.

WILL WE LEARN FROM EXPERIENCE?

Back in 1913 when the income tax started, there were some hot arguments over the principle of the thing. But the new idea was accepted, in spite of principle,

presumably because those in the lower income groups, who are always in the majority, figured their pocket-books were safe and would escape the tax.

But look how Frankenstein has grown and turned on its creators! Let it be a lesson to all those misguided souls who dream of getting something for nothing at their fellow citizen's expense!

	1913	Today
Number of people paying Federal Income Taxes	under 400,000	55,000,000
Personal tax exemption	\$3,000	\$600
Minimum tax rate	1% over \$3,000	22.2% over \$600
Maximum tax rate	7% over \$500,000	92% over \$200,000
Tax rate on corporations	1%	70% (combined)

INCOME TAXES

"The Government last year collected about \$362 in taxes for each man, woman and child in the country—or \$1,402 FROM THE AVERAGE FAMILY.

"The internal revenue bureau announced that total collections in the last calendar year amounted to \$56,093,339,429.69—by far the biggest total in history."—*Detroit News*.

* * *

Life insurance ownership in this country was at a record \$253.1 billion on January 1, under an aggregate of over 210 million policies, the Institute of Life Insurance reported. This an average of more than four policies for each family in the country.

Cook County Graduate School of Medicine

ANNOUNCES CONTINUOUS COURSES

SURGERY—Intensive Course in Surgical Technic, two weeks, starting September 22, October 6, October 20.

Surgical Technic, Surgical Anatomy and Clinical Surgery, four weeks, starting October 20.

Surgical Anatomy and Clinical Surgery, two weeks, starting September 22, November 3.

Surgery of Colon and Rectum, one week, starting September 15, October 20.

Gallbladder Surgery, ten hours, starting October 20.

Bronchoscopy, one week, by appointment.

General Surgery, one week, starting October 6.

General Surgery, two weeks, starting October 6.

Breast and Thyroid Surgery, one week, starting October 6.

Esophageal Surgery, one week, starting October 13.

Thoracic Surgery, one week, starting October 20.

Fractures and Traumatic Surgery, two weeks, starting October 6.

GYNECOLOGY—Intensive Course, two weeks, starting October 20.

Vaginal Approach to Pelvic Surgery, one week, starting September 22, November 3.

OBSTETRICS—Intensive Course, two weeks, starting September 29, November 3.

MEDICINE—Electrocardiography and Heart Disease, two weeks, starting September 22.

Intensive General Course, two weeks, starting October 13.

Gastroenterology, two weeks, starting October 27.

Gastroscopy and Gastroenterology, two weeks, starting September 15, November 3.

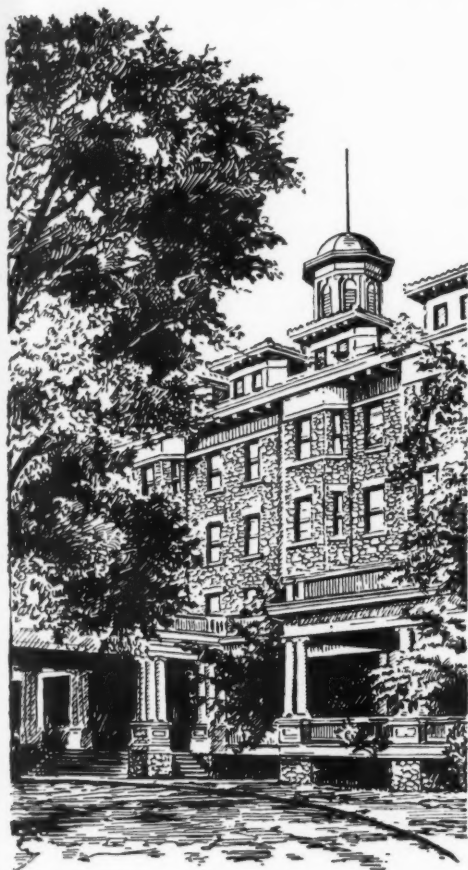
CYSTOSCOPY—Ten-day Practical Course starting every two weeks.

DERMATOLOGY—Intensive Course, two weeks, starting October 13.

TEACHING FACULTY—ATTENDING

STAFF OF COOK COUNTY HOSPITAL

ADDRESS: REGISTRAR, 707 South Wood Street, Chicago 12, Illinois



Battle Creek Sanitarium

*86th Year of
Continuous Service*

A general medical institution equipped for diagnostic and therapeutic service. Close co-operation with home physicians in all cases referred to us.

For information, address Box 40

THE BATTLE CREEK SANITARIUM

Battle Creek, Michigan

Not affiliated with any other Sanitarium

The Medical Staff

J. R. JEFFREY, M.D., Medical Director—Cardiologist and Internal Medicine.

*G. K. SWARTZ, A.B., M.D.—Chief of Staff—Neuropsychiatry.

*H. E. ANDERSON, B.S., M.D., M.S., D.N.B.—Consultant in Dermatology.

H. R. BODINE, M.D.—Consultant in Gynecology.

*C. W. BRAINARD, B.S., M.D., F.A.C.S.—Consultant in Orthopedics.

M. J. CAPRON, M.D., F.A.C.P.—Consultant in Internal Medicine.

*A. R. DICKSON, M.D., F.A.C.S.—Chief Surgeon.

MARGERY J. GILFILLAN, M.D., Internal Medicine.

*WILFRID HAUGHEY, A.M., M.D., F.A.C.S.—Diseases of the Eye, Ear, Nose and Throat.

*D. K. HIBBS, B.S., M.S., M.D., F.A.C.S.—Urology.

*A. A. HUMPHREY, B.S., M.D., F.A.C.P.—Pathologist.

R. M. KELLOGG, D.D.S.—Dentistry and Oral Surgery.

NETTIE E. KNAPP, M.D.—Internal Medicine.

*G. T. PATRICK, M.D.—Radiologist.

*D. J. PEARSON, M.D.—Proctology.

GEO. W. SLAGLE, M.D., F.A.C.P.—Consultant in Internal Medicine.

W. VANDER VOORT, M.D.—Metabolic Diseases.

S. A. YANNITELLI, B.A., M.D., D.N.B.—Consultant in Diseases of the Chest.

G. H. LONG, D.S.C.—Chiropodist (by appointment).

MATHILDE MESSNER—Physical Therapist.

HARRY MAC CREERY—Recreational Therapy.

*Diplomate of American Board.

PR Accents Good Will

Public relations is a continuing job. While every action of a Michigan M.D. has its public relations effect, it is physically impossible for the doctor of medicine to conduct a complete, personal public relations program of his own.

He must therefore depend upon his county and state medical organizations to reach those outside of his own area of direct social contact. Through the public relations activities of his county and state medical societies, he is able to supply information desired by the people on matters—both scientific and socio-economic—concerning their health.

Doctors of medicine set the overall pattern of the Michigan State Medical Society public relations program; the details and implementation of the program are carried on by trained personnel in the department.

The working tools of the PR department are the various media which reach into the lives of the people of Michigan—television, radio, newspapers, other publications, motion pictures, exhibits, and speakers.

MSMS Public Relations Projects

Before the finished product can be approved by the doctors of medicine and relayed to the public, a certain amount of work behind-the-scenes is necessary on the part of public relations personnel. The following brief outline of the implementation of various public relations projects of MSMS gives a quick glance of the work involved in these activities:

Cinema—The Michigan State Medical Society has three motion pictures available for distribution. They are "To Save Your Life," "To Your Health," and "Lucky Junior." Both "To Your Health" and "Lucky Junior" were produced by a commercial motion picture organization. "To Save Your Life" was produced by the public relations staff at a great saving to MSMS. In the production of this motion picture, it was therefore necessary not only to supervise closely the content of the film but to master all details required in film production. At the onset of the filming this meant working with the photographer to determine exactly what was required to bring forth the proper message in the film. Once this was done it was

necessary to arrange for the shots to be taken in hospitals and universities in various parts of the state and to contact persons who would appear in the film as actors. Once the film footage was shot the sequences were organized into proper and logical order, keeping in mind the requirements for dramatic effect and for clarity of the picture's message. When the process of editing was completed, the final script was written. Previously, several preliminary scripts had been written in outline form to guide the photographer in the production. After the film was recorded and ready for release, there was still work to be done that would continue as long as the film is used by MSMS. The film was publicized to the doctors of medicine in Michigan and to medical societies outside of Michigan. A campaign was also conducted to interest lay groups in showing the film. When requests began to come in for the film, a distribution schedule was set up for the prints available of "To Save Your Life." This schedule eliminated many conflicts in the distribution of the film to the groups requesting it.

Television—A television show is produced by the Michigan State Medical Society in Detroit each week on WXYZ-TV called "Medical Mailbox." Last May MSMS discontinued its second TV production in Detroit and passed the time spot on to the Michigan Health Council. MSMS personnel continued to act in an advisory capacity for the MHC-TV show which is produced each Sunday on WJBK-TV, Detroit, and is called "Court of Health." In the coming year, the use of television will be augmented to a great extent so that MSMS programs will reach into every corner of the state available to television. The WXYZ television show requires much preliminary planning before it is produced weekly. Contacts are made with television station personnel to insure the production of a type of program in keeping with the policy of the medical profession. The subject matter is carefully selected before the participating doctors or lay persons are contacted to appear on the program. Once the subject matter has been set and the guest doctor has agreed to appear, several consultations regarding the material and the approach to be made of the subject matter

(Continued on Page 1130)

Corticotropin (ACTH)

Upjohn

The Upjohn Company in early June announced production of Cortisone Acetate, 25 mg. Tablets.

Now we are announcing the availability of Corticotropin (ACTH).

Sterile Corticotropin (Upjohn) is available in two potencies: in vials containing 25 U.S.P. units and in vials containing 40 U.S.P. units.

Upjohn's extensive experience in the research and manufacture of adrenal cortical products has made it possible to provide the medical profession with *both* Cortisone and Corticotropin.



A contribution of

Upjohn

Research

to this era of metabolic medicine

THE UPJOHN COMPANY, KALAMAZOO, MICHIGAN

(Continued from Page 1128)

are held. In addition to the personal contacts, a certain amount of correspondence before, during, and after each show is required.

Radio—Despite the great popularity of television, MSMS still utilizes the powerful medium of radio. When it is necessary to bring a vital message of the medical society to the people of Michigan, individual broadcasts from Michigan's radio stations are arranged. Because many radio stations require a definite script before a program is broadcast, this must be provided by the public relations department whether it is a straight speech or a panel-type program. During the MSMS Annual Session and the Michigan Clinical Institute, radio time for participating doctors of medicine is arranged.

The five minute health news program, "Tell Me, Doctor" is produced under the direction of the MSMS public relations department. This means supplying material to the writers of the show and approving and processing the finished scripts. From time to time a meeting with the advertising agency handling the show is feasible to work out any problems connected with the production. In addition, publicity has to be developed for the show and the distribution of transcriptions to other state medical societies is handled.

Newspapers—The newspaper is another powerful medium which reaches into every home. All newsworthy activities of the Michigan State Medical Society are supplied to the Michigan dailies and weeklies through periodic news releases. Contact must be constantly maintained with these newspapers. This is done by visits of the public relations Field Secretaries in their assigned areas as well as through local meetings of the press by MSMS representatives. The public relations department also serves as the source of information on all queries from newspapers and maintains individual contact with science writers of the major newspapers. At the time of the Annual Session and the Michigan Clinical Institute, publicity for these meetings is arranged and developed; this includes advance news releases to all Michigan dailies, weeklies, county medical society bulletins, and selected out-of-state newspapers. Before the conventions are held, a press dinner is planned approx-

imately a week prior to the meeting to acquaint the newsmen with the coming events.

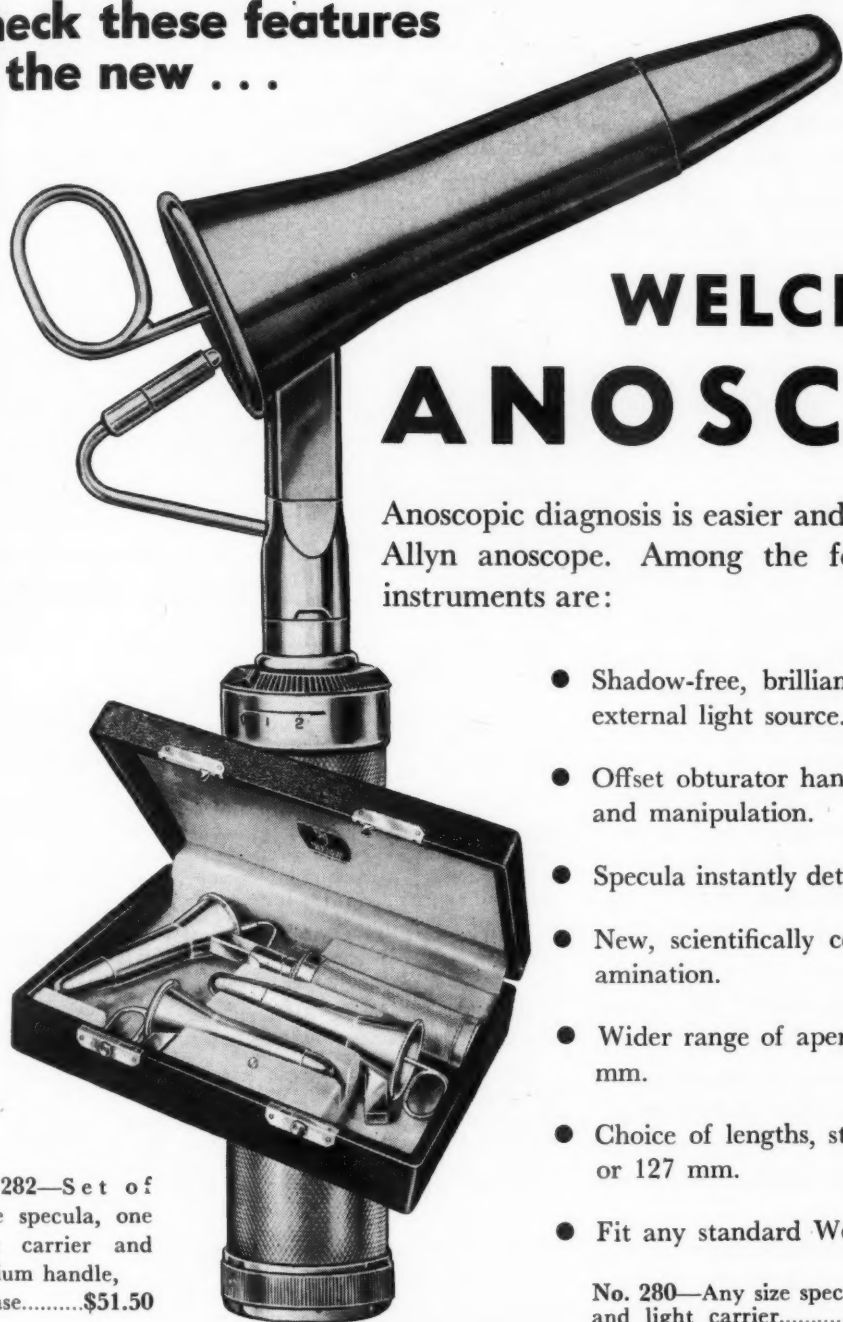
Publications—Messages of the Michigan State Medical Society are brought to the people through the printed word in brochures and pamphlets. Perhaps the most outstanding MSMS brochure is the Medical Association publication, "In Planning Your Career." Requests are constantly received for this brochure which has been distributed to all parts of the United States. Recently the illustrated booklet was revised and brought up to date. This necessitated meetings with the advisory doctors of medicine to make these changes and then with the printers. Just before the Michigan Clinical Institute and the Annual Session, a preliminary program announcing each event is developed. PR personnel also assist in the publication of the AUXILIARY NEWS, the organ of the MSMS Woman's Auxiliary. Throughout the year, various special events also require the development of pamphlets. An example of this is the brochure which was prepared for the Beaumont Restoration.

Articles—At intervals, Michigan's doctors of medicine are asked for articles which will appear in state and national magazines. These are supplied to the magazines on the topic requested or in the case of a staff written article the necessary materials are provided the writer. This means, of course, that meetings and correspondence must be undertaken with the writers. Also in this classification is aid in the preparation of official speeches to be given by MSMS officers. Also, monthly articles are written for the JOURNAL of the Michigan State Medical Society.

Exhibits—The public relations department supplies exhibits which tell the story of specific activities of Michigan's medical profession. These exhibits are maintained at the Michigan State Fair, the Michigan Clinical Institute, the Annual Session of MSMS, and the Michigan Rural Health Conference. In designing the exhibit, it is necessary to meet with the artist and display personnel to incorporate the ideas requested by the doctors of medicine. When an exhibit is used at any of the meetings it must be manned by PR personnel who distribute pamphlets and answer questions.

*(Continued on Page 1132)*Check
of theNo.
thre
ligh
med
in c

Check these features
of the new . . .



WELCH ALLYN ANOSCOPES

Anoscopic diagnosis is easier and quicker with the Welch Allyn anoscope. Among the features of these superb instruments are:

- Shadow-free, brilliant illumination, requiring no external light source.
- Offset obturator handle ring for ease of insertion and manipulation.
- Specula instantly detachable for sterilization.
- New, scientifically correct shape for painless examination.
- Wider range of aperture diameters, from 8 to 22 mm.
- Choice of lengths, standard 89 mm. (illustrated) or 127 mm.
- Fit any standard Welch Allyn battery handle.

No. 282—Set of three specula, one light carrier and medium handle, in case.....\$51.50

No. 280—Any size speculum complete with obturator and light carrier.....\$15.00

"For Finer Equipment"

Randolph Surgical

SUPPLY COMPANY

PHYSICIANS AND HOSPITAL SUPPLIES

60 COLUMBIA ST. WEST • WOODWARD 1-4180 • FOX THEATRE BLDG. • DETROIT 1, MICH.

(Continued from Page 1130)

Speakers Bureau—The spoken word plays an important role in MSMS PR activities. Speakers are obtained through the MSMS Speakers Bureau to appear before service clubs, schools and vocational groups. In addition, speakers are provided to out-of-state Woman's Auxiliary affairs and to the various women's clubs in the state.

Legislative—The MSMS Field Secretaries are constantly available to state legislators to supply technical information that these public officials may need in the conduct of their offices.

Organizational Activities

Michigan's Foremost Family Physician—One of the most newsworthy activities of the Michigan State Medical Society is the annual selection of Michigan's Foremost Family Physician. Before and after this selection is made, many preparations in this project fall to the PR Department. These include the supplying of biographical data sheets to county medical societies which have a candidate and later the securing of information and pictures from the candidates themselves. This detailed information on the candidates is submitted to The Council and to the House of Delegates of the Michigan State Medical Society. After the "Foremost" is selected, appropriate publicity throughout the year is developed. Finally, Michigan's Foremost Family Physician is presented to the American Medical Association for the award of the Outstanding General Practitioner of the Year, through the preparation of a dignified, informative brochure.

Fifty Year Club—New members are brought into the Fifty Year Club each year during the Annual Session. Public relations personnel assist in developing publicity to the local newspapers on these "elder statesmen," nominated by their county medical societies.

Meetings—Public Relations personnel are used to cover MSMS meetings not only of the Public Relations Committee and its subcommittees but of other committee meetings. Attendance of public relations personnel is required at the annual County Secretaries-Public Relations Conference, the Michigan Rural Health Conference, Michigan Industrial Health Day, and at PR meetings of the AMA, etc.

All the many and varied activities of the MSMS public relations department are beamed to one major objective: to demonstrate to the people that the *BEST* medical care in the world is available in this State and country. Public relations tells of an important job well done. It helps to maintain goodwill.

INDIVIDUAL INCOMES REACH PEAK

Income received by individual Americans rose from 218 billion dollars in 1950 to 243 billion in 1951—an increase of 12 per cent—the Commerce Department reported recently.

Per capita income was \$1,584 in 1951—10 per cent above the 1950 average of \$1,439.

The survey dealt with income, before deduction of taxes, received by individuals from all sources. Such income includes wages, salaries, dividends, interest, net rents, social insurance benefits, relief and net income of unincorporated businesses, including farms. It does not include corporation income.

Income payments received by individuals in 1951 were higher than in 1950 in every state of the nation. This was because production and prices were increasing under the impetus of expanding demand.

The largest increases in total payments to individuals occurred in Arizona (23 per cent), South Carolina (21 per cent) and New Mexico and South Dakota (18 per cent each). The principal factor in each of these states was a sharp rise in farm income.

There were increases of 16 per cent in Colorado, Georgia and Nevada and 15 per cent in Indiana, Kentucky, Ohio, Utah, Virginia and Wyoming.

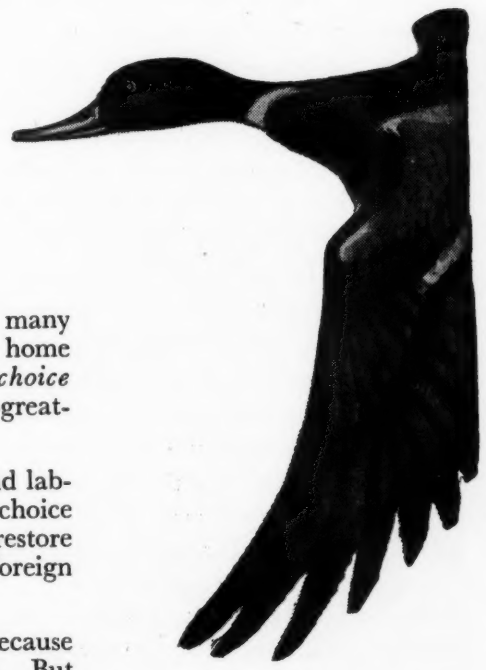
Relative differences between states have narrowed over the past two decades but are still wide in many cases.

Per capita income last year ranged from \$771 in Mississippi to nearly \$2,100 in Delaware and the District of Columbia. Others in the top rank were Nevada, \$2,029; Connecticut, \$1,999; New York, \$1,996; California, \$1,933; Illinois, \$1,928, and New Jersey, \$1,885. —*Detroit Free Press*, Aug. 17, 1952.

* * *

TENNIS, WITH INSULIN

The lone tennis court at their camp in the Catskill foothills held all the magic of the center court during the finals of a championship tournament for the eighty diabetic children who looked on the other day. They watched two of America's top tennis stars demonstrate that diabetes, with proper medical care and supervision, need be no deterrent to leading a full life. The players were William Talbert, playing captain of this year's United States Davis Cup team, and Hamilton Richardson, former national junior champion. They too are diabetics. They showed the youngsters that strenuous exercise is both physically and psychologically good for the diabetic and by their example urged the children to be active and not think of themselves as invalids. The match and the reaction to it on the part of the youngsters were a tribute to the courage of both the players and the children. It provided new proof that many people suffering from illness can lead successful and well-rounded lives.—From the *New York Times*



"THERE'S ALWAYS A

Leader..... MALLARD, INC."

Due Partly to a Tea Party 179 Years Ago

The revolution that followed the Boston Tea Party many years ago was fought against dictation by anyone at home or abroad. Here at Mallard we feel that *freedom of choice* is one of the important American Freedoms our great-grandfathers won.

Freedom of choice lets us choose finest ingredients and laboratory controls in our manufacture. Freedom of choice lets you seek the pharmaceuticals you feel will best restore your patients' health. There is no ruling edict by a foreign commissar.

We're convinced the American people benefit because you are absolutely free to prescribe their medicinals. But maybe we are prejudiced. It's your freedom that allowed you to choose Mallard for over 40 years. Thank you.

Karl O. Mallard

Karl O. Mallard
President, Mallard, Inc.



Michigan's Rheumatic Fever Control Program Surges Ahead

Another "Michigan First"

The Rheumatic Fever Control Program of the Michigan State Medical Society, in co-operation with its component county medical societies, continues to progress and develop. This pioneering project remains the only rheumatic fever control program sponsored and organized by a State Medical Society on a state-wide basis, among all the 48 states. It is a Michigan "First."

A measure of recognition of the importance of this undertaking has come from without Michigan in that the Co-ordinator of the MSMS Rheumatic Fever Control Program, Leon DeVel, M.D., of Grand Rapids, has been appointed to membership on the American Council on Rheumatic Fever, and to the chairmanship of the Committee on Rheumatic Fever and Cardiac Disease of the American Academy of Pediatrics.

Program Watched by Critics

The program of the Michigan State Medical Society—a program by and for the doctors of medicine of Michigan—must not fail: it is being closely and critically watched by those who say that a medical society is incapable of assuming leadership in this field. The program of the Michigan State Medical Society is clearly not failing: it is proceeding forward toward its original goals. Nevertheless there still remain large areas for improvement and extension which can be conquered by continued understanding and co-operation of every member of the Michigan State Medical Society and its officers.

Rheumatic Fever Diagnostic and Consultation Centers

The Rheumatic Fever Diagnostic and Consultation Centers, organized in the several medical centers of the State under the auspices of the local county medical society are the feature undertaking of the Michigan Plan. They are designed as an aid to the private practice of medicine to help the M.D.s of Michigan with their difficult diagnostic and management problems in rheumatic fever, suspected rheumatic fever and rheumatic heart disease. It cannot be emphasized often enough or strongly enough that the several Rheumatic Fever Diagnostic and Consultation Centers accept patients

only and exclusively on referral by their family physician and that the subsequent management of the case remains the responsibility and the privilege of the referring physician.

Rheumatic Fever Centers Organized Prior to January 1, 1952

Alpena Center, serving Alpena, Oscoda, Montmorency and Presque Isle counties, with a population of 49,527. Chairman: Harold Kessler, M.D., Consultant: Aaron Stern, M.D., University Hospital, Ann Arbor. **Continues active.**

Ann Arbor, serving Washtenaw, Monroe, Lenawee and Livingston counties, with a population of 272,655. Chairman: H. H. Riecker, M.D. **Continues active.**

Bay City, serving Bay, Midland, Huron, Gladwin, Clare, Arenac, Roscommon, Ogemaw and Iosco counties, with a population of 211,760. Chairman: Robert E. Fisher, M.D. **Continues active.**

Detroit and Wayne County, serving Wayne County with a population of 2,395,301. Roy D. Tupper, M.D., chairman, Louis J. Bailey, M.D., co-chairman. There are thirteen Diagnostic and Consultation Centers as follows:

Providence Hospital	Chairmen—
Harper Hospital	Russell Weyher, M.D.
Memorial Hospital	John M. Murphy, M.D.
Woman's Hospital	W. J. Wilson, M.D.
Highland Park Hospital	B. I. Johnstone, M.D.
Delray Hospital	Louis Jaffe, M.D.
St. Joseph Mercy Hospital	David I. Sugar, M.D.
Receiving Hospital	E. D. Maire, M.D.
Henry Ford Hospital	Gordon B. Myers, M.D.
Cottage Hospital	J. A. Johnston, M.D.
Deaconess Hospital	Kenneth M. McColl, M.D.
Grace Hospital	Carl Witus, M.D.
Wyandotte General Hospital	L. T. Colvin, M.D.
	D. H. White, M.D.

Grand Rapids: serving Kent, Mecosta, Montcalm, Ionia, Barry, Allegan and Ottawa counties with a population of 520,439. Jerome Webber, M.D., chairman. **Continues active.**

Jackson: serving Jackson and Hillsdale counties, with a population of 139,159. Frank VanSchoick, M.D., chairman. **Continues active.**

Kalamazoo: serving Kalamazoo, St. Joseph, and

(Continued on Page 1136)

DOUBLE DUTY

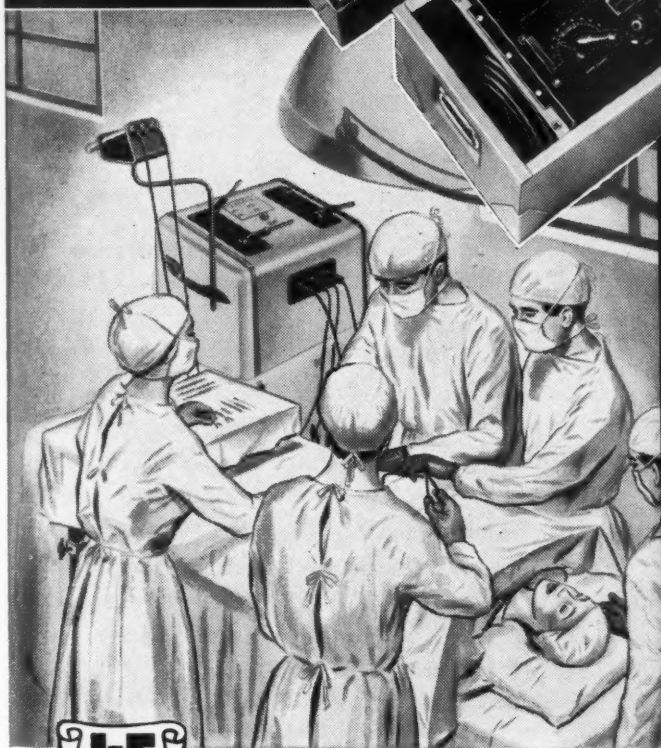


Military *Bovie*

Be it battle-front or civilian surgical duty—a BOVIE electro-surgical unit serves with equal distinction. Bovie precision and dependability, unequalled by any other electro-surgical apparatus, is the result of more than 34 years continuous research and technological improvement by L-F engineers—augmented by military experience in three wars.

Today's Military BOVIE is built for fast-moving global war and the most extensive and demanding surgical needs. Portable and rugged enough for rough transport and parachute drop, it will resist tropical fungus and drenching rains, or arctic ice and snows. The development of this unit makes the same safe cutting and coagulating currents available to the military as are so successfully used by the civilian surgeon.

Whether you're in uniform or out. Bovie's are available for your use. The Army, Navy, and Air Force are taking only a portion of today's accelerated output.



SYMBOL OF DEPENDABILITY AND PERFORMANCE IN
ELECTROSURGICAL APPARATUS • ELECTROMEDICAL APPARATUS
X-RAY SPECIALTIES

RECOGNIZED THE WORLD OVER

THE LIEBEL-FLARSHEIM COMPANY

CINCINNATI 2, OHIO

SEPTEMBER, 1952

Say you saw it in the *Journal of the Michigan State Medical Society*

1135

MICHIGAN'S RHEUMATIC FEVER PROGRAM

(Continued from Page 1134)

parts of Van Buren and Cass counties with a population of 199,843. H. S. Heersma, M.D., chairman. **Continues active.**

Lansing: serving Ingham, Eaton, Clinton and Shiawassee counties with a population of 289,191. Robert McGillicuddy, M.D. **Continues active.**

Marquette: This center inactive, due to the Federal-sponsored program in the Western Upper-Peninsula.

Muskegon: serving Muskegon, Newaygo and Oceana counties with a population of 158,297. Devere R. Boyd, M.D., chairman.

Pontiac: serving Oakland and Macomb counties with a population of 577,718. D. S. Smith, M.D., chairman. **Continues active.**

Saginaw: serving Saginaw, Gratiot, Isabella and Tuscola counties with a population of 253,334. D. P. Gage, M.D., chairman. **Continues active.**

Traverse City: serving Grand Traverse, Antrim, Kalkaska, Missaukee, Wexford, Osceolas, Lake, Mason, Manistee, Benzie and Leelanau counties with a population of 143,172. Mark F. Osterlin, M.D., chairman. **Continues active.**

Among the twenty-five above-listed Rheumatic Fever Diagnostic and Consultation Centers special mention for successful operation of the Center and co-operation by the medical profession should go to the following Centers: Grand Rapids, Kalamazoo, Muskegon, Traverse City, Ann Arbor and Pontiac.

Rheumatic Fever Centers Organized Since January 1, 1952

Benton Harbor-St. Joseph: Sponsored by the Berrien County Medical Society to serve Berrien and parts of Van Buren and Cass counties with a population of 142,699. Marshall J. Feeley, M.D., chairman.

Petoskey: Sponsored by the Northern Michigan Medical Society, to serve Emmet, Charlevoix, Cheboygan and Otsego counties with a population of 49,527. Thomas R. Kirk, M.D., chairman.

Royal Oak: Sponsored by the Oakland County Medical Society to serve southern Oakland county and adjacent parts of Macomb and Wayne counties. James F. Pearce, M.D., chairman.

Sault Ste. Marie: Sponsored by the Chippewa-Mackinac County Medical Society to serve Chippewa, Mackinac, Luce and parts of Schoolcraft counties. Donald D. Finlayson, M.D., chairman.

Unorganized Rheumatic Fever Centers

Battle Creek: To serve Calhoun and Branch counties. President Robert K. Curry, M.D., reports that he expects the Calhoun County Medical Society to approve the projected Battle Creek Rheumatic Fever Center, early this fall.

Port Huron: To serve St. Clair, Sanilac and parts of Lapeer and Macomb counties. President F. E. Ludwig, M.D., of the St. Clair County Medical Society reports that he expects his society to approve a Port Huron Rheumatic Fever Center at an early meeting next fall.

Flint: To serve Genesee and Lapeer counties. Contacts have been made; progress will be reported later.

Desk Reference Cards for Rheumatic Fever

A series of Desk Reference Cards for Rheumatic Fever, featuring various aspects of the Rheumatic Fever problem, have been prepared and are in the process of preparation. Four such cards have been mailed to every member of the Michigan State Medical Society. As follows:

- Card No. 1 Diagnostic Criteria of Rheumatic Fever.
- Card No. 2 Prevention of Recurrences.
- Card No. 3 Mitral Valve Surgery for Mitral Stenosis.
- Card No. 4 Heart Murmurs.
- Card No. 5 Drugs in Rheumatic Fever: in the process of mailing.
- Card No. 6 Classification of Heart Disease. In preparation.
- Card No. 7 Growing pains. In preparation.
- Card No. 8 The Sedimentation Rate. In preparation.

Postgraduate Fellowships for the Study of Rheumatic Fever

Four fellowships for the postgraduate study of rheumatic fever to attend the Comprehensive Course in Rheumatic Fever and Rheumatic Heart Disease offered at St. Francis Sanatorium, Long Island, and carrying each a stipend of up to \$500 from May 19 to May 31, 1952, were awarded to and attended by the following physicians, active in MSMS Rheumatic Fever Centers:

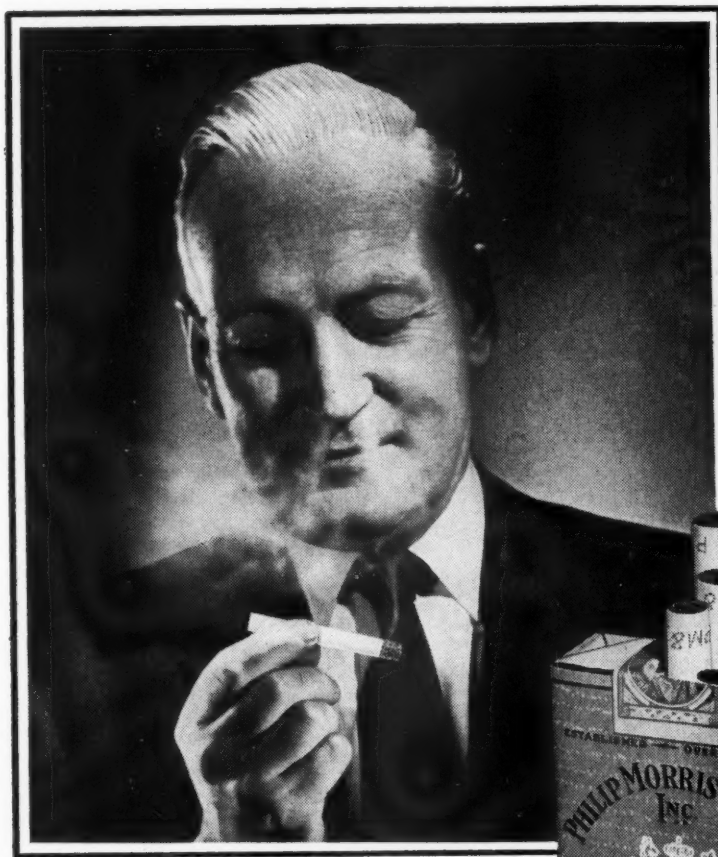
- Anthony Cefai, M.D., Pontiac.
- John D. Littig, M.D., Kalamazoo.
- S. T. Harris, M.D., Ypsilanti.
- David P. Gage, M.D., Saginaw.

Statistical Report for the First Six Months of 1952

There were a total of 275 new admissions to the Rheumatic Fever Centers for the period from January 1, 1952, to June 30, 1952, plus 142 re-exami-

(Continued on Page 1140)

PROOF WITH ONE PUFF?



So distinct is the difference between PHILIP MORRIS and any other leading brand, that we believe you will notice it with a single puff. Won't you try this simple test, Doctor, and see?

Take a PHILIP MORRIS and any other cigarette

1. Light up either one first. Take a puff—get a good mouthful of smoke—and s-l-o-w-l-y let the smoke come directly through your nose.
2. Now, do exactly the same thing with the other cigarette.

You will notice a distinct difference between PHILIP MORRIS and any other leading brand.

PHILIP MORRIS

Philip Morris & Co., Ltd., Inc., 100 Park Avenue, New York 17, N. Y.

The Health Plank in Party Platforms

1952 REPUBLICAN PARTY PLATFORM

We recognize that the health of our people as well as their proper medical care cannot be maintained if subject to federal bureaucratic dictation. There should be a just division of responsibility between government, the physician, the voluntary hospital, and voluntary health insurance. *We are opposed to federal compulsory health insurance with its crushing cost, wasteful inefficiency, bureaucratic dead weight, and debased standards of medical care.* We shall support those health activities by government which stimulate the development of adequate hospital services without federal interference in local administration. We favor support of scientific research. We pledge our continuous encouragement of improved methods of assuring health protection.

1952 DEMOCRATIC PARTY PLATFORM

We will continue to work for better health for every American, especially our children. We pledge continued and wholehearted support for the campaign that modern medicine is waging against mental illness, cancer, heart diseases and other disease.

Research.—We favor continued and vigorous support, from private and public sources, of research into the causes, prevention and cure of disease.

Medical Education.—We advocate federal aid for medical education to help overcome the growing shortages of doctors, nurses, and other trained health personnel.

Hospitals and Health Centers.—We pledge continued support for federal aid to hospital construction. We pledge increased federal aid to promote public health through preventive programs and health services, especially in rural areas.

Cost of Medical Care.—We also advocate a resolute attack on the heavy financial hazard of serious illness. We recognize that the costs of modern medical care have grown to be prohibitive for many millions of people. We commend President Truman for establishing the non-partisan commission on the health needs of the nation to seek an acceptable solution of this urgent problem.

STATEMENTS ON HEALTH INSURANCE

GENERAL DWIGHT D. EISENHOWER, *Republican Nominee for President*—At his press conference in Abilene, Kansas, on June 5, 1952, General Eisenhower was asked the question: "Are you for Compulsory Health Insurance?"

Here is General Eisenhower's reply:

"I am not going to answer too specifically, because what could be in a bill labeled compulsory health insurance? I am not so certain. But I can tell you this: I am quite certain over the years that I was at Columbia, no one spoke out more than I did against the centralization of power in Washington, against bureaucratic government and submitting our lives toward a control that would lead inevitably to socialism. . . . I do believe that every American has a right to decent medical care."

In discussing Federal aid to medical education, General Eisenhower said that in private universities we must "support medical education by private means, because if we didn't it would be the first step toward the socialization of medicine, and I am against socialization."

GOVERNOR ADLAI STEVENSON OF ILLINOIS, *Democratic Nominee for President*.—

"I am against the socialization of the practice of medicine as much as I would be against the socialization of my own profession, the law. . . . If the insurance principle could be brought to bear on these catastrophic illnesses, it would largely eliminate the specter of terror from the average home. . . . I am sure that . . . the common objective can be largely realized without the destruction of professional independence.

"Basically, the problem is how to lift people over the costs of major illness. I don't know whether voluntary plans can do the job. I think the new commission on medical needs may well add some light and remove some heat, enabling us to find a satisfactory solution to this perplexing problem."

In a press conference on July 30, 1952, Governor Stevenson was asked whether he saw "eye to eye with Federal Security Administrator Oscar Ewing" on the issue of Compulsory Health Insurance.

Governor Stevenson's reply to this question was as follows:

"No, on a number of occasions in the past I have indicated that I thought a new approach was necessary. I emphatically believe that we must find some solution

(Continued on Page 1140)



✱ This identical triplet allergic to milk
MULL-SOY eliminated symptoms, gave
 superior weight and growth curves

From the Summary* "A case of gastrointestinal allergy caused by milk in one of a set of identical female triplets is reported. Elimination of milk from the diet of the allergic baby and substitution of soy milk caused a dramatic regression of symptoms, and weight gains which surpassed those of the non-allergic sisters."

From the Conclusions* "Milk allergy need no longer be the difficult infant feeding problem it was formerly. Complete elimination of milk and all milk-containing foods is feasible and desirable in milk allergy and can now be safely and simply carried out. The soy preparation [Mull-Soy] fed to Baby R gave weight and growth curves equal to and better than those of the two sisters fed a cow's milk formula."

*Sobel, S. H.: Milk Allergy in a case of Triplets, *Clin. Med.*, August 1952.

EASY—To prescribe—To take—To digest

a liquid, homogenized, vacuum-packed
 food for all patients allergic to milk

The **BORDEN** Company,
 Prescription Products Division,
 350 Madison Ave., N. Y. 17



MULL-SOY®

STATEMENTS ON HEALTH INSURANCE

(Continued from Page 1138)

to the problem of catastrophic illness and its devastating expense.

"The President's Commission, of which my friend Dr. Paul V. Magnuson is Chairman, might well come up with some recommendations and suggestions which would be more palatable, and I am hopefully awaiting the result of the deliberations."

U. S. SENATOR RICHARD M. NIXON, *Republican Nominee for Vice President*.—(Excerpts from address delivered before the seventh annual meeting, Conference of Presidents and Other Officers of State Medical Associations, Atlantic City, June 10, 1951.)

"I would like . . . to express my congratulations to the members of this group, and to the medical profession generally, for the very splendid political action the medical profession took in the last campaign leading up to the November election, and in other previous campaigns. As a result of that action, I think we can safely say that . . . there is no chance whatever at this time for any type of compulsory health insurance program to be enacted. . . . On the other hand, I think you must recognize, and that all of us who are interested in this fight must recognize, that those who favor such legislation will continue to work fanatically for their cause, in the hope that somehow, sometime in the future, they will be able to accomplish their purpose."

"I think . . . that a great number of people, probably a majority of the people in the country, are convinced that the compulsory health insurance programs which sound so good in theory have not worked out in action in those nations which have tried them."

"I am convinced that the medical profession has taken a very long step in the right direction with its recently announced program of subsidizing medical schools on a voluntary rather than on a government basis. I would suggest also that additional voluntary action is needed (in dealing with) the problem of encouraging wherever possible voluntary health insurance programs. *It seems to me that the objective toward which we should work in the United States is a system where eventually anybody who wants health insurance can get it—where those who should have health insurance are encouraged to get it—but where no one in the United States is compelled to take out such insurance against his will.* If the profession adopts that objective we will remove by voluntary action the strongest arguments that the proponents of government control of the medical profession have at the present time."

"I believe it is essential that all members of the medical profession recognize that an attempt to socialize any American profession—any American institution—constitutes a threat to all."

"Traditionally, the great accomplishments in this coun-

try have not been through government action, but through individual and co-operative action. . . . (Our task) is by precept and by example, to prove to the people of the world that a free people, working as individuals, working co-operatively, can solve the problems of our society and can solve them more effectively than can a government."

U. S. SENATOR JOHN J. SPARKMAN, *Democratic Nominee for Vice President*.—

"I am in favor of adequate medical attention for the people of this country. However, I have not favored what is generally known as Socialized Medicine."

"I would be opposed to any plan which I thought would, in effect, socialize medicine, and to any medical program which would destroy the relationship of doctor and patient."

The foregoing statement was made by Senator Sparkman in an interview with Mr. Al Goldsmith, editor of *Washington Insurance Newsletter*, on July 31, 1952.

Washington Insurance Newsletter reported that Senator Sparkman strongly indicated he was opposed to the Truman National Compulsory Health Insurance Program, but declined to take a position on specific bills now before the Congress.

In 1949, when the roll was called in the U. S. Senate on President Truman's Reorganization Plan No. 1, which would have created a Department of Welfare, Senator Sparkman stood with medicine in opposition to this scheme to give Federal Security Administrator Oscar Ewing cabinet status, with increased power over the health and medical affairs of the country.

MICHIGAN'S RHEUMATIC FEVER PROGRAM SURGES AHEAD

(Continued from Page 1136)

nations, for a grand total of 417 examinations. The diagnosis of rheumatic fever and/or rheumatic heart disease was confirmed in 88 cases. The cumulative register as of June 30, 1952, shows: 3,178 admissions, 850 diagnosed rheumatic fever and/or rheumatic heart disease, 1,948 re-examinations, and a grand total of examinations: 5,126.

Outstanding in their performances are the Alpena, Ann Arbor, Grand Rapids, Kalamazoo, Muskegon, Petoskey and Traverse City Rheumatic Fever Diagnostic and Consultation Centers.

new convenience in broad-spectrum therapy

Introducing new flexibility in broad-spectrum
antibiotic therapy with the most familiar and

acceptable form of medication for your patients—
well-tolerated, rapidly-effective Crystalline Terramycin

Amphoteric Tablets (sugar coated) are prepared from
the pure, natural antibiotic substance, assuring
availability throughout the pH range of the
gastrointestinal tract. Will not contribute to gastric acidity.

Terramycin_{AMPHOTERIC} tablets

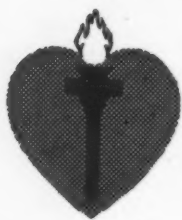
SUGAR-COATED

*Supplied: 250 mg. tablets, bottles of 16 and
100; 100 mg. and 50 mg. tablets,
bottles of 25 and 100.*

world's largest producer of antibiotics

Pfizer

ANTIBIOTIC DIVISION, CHAS. PFIZER & CO., INC., BROOKLYN 6, N. Y.



Heart Beats

LITERATURE AND FILMS AVAILABLE

Realizing the many requests which Doctors of Medicine receive from various non-medical groups to discuss health problems related to the cardiovascular system, the Michigan Heart Association is devoting this page of *THE JOURNAL* to a complete listing of all lay literature and films available through its office. This valuable service is in keeping with the Association's established policy of being of assistance to the medical profession wherever and whenever possible. It is felt that these pamphlets and motion pictures will be of immeasurable aid to the medical doctor in conducting discussions with lay groups.

All of the material listed below can be secured, *free of charge*, from the Michigan Heart Association, 4421 Woodward, Detroit 1, Michigan, or by calling its office at TEmple 1-8550. Subsequent issues of *THE JOURNAL* will carry information concerning similar material for use in scientific or medical meetings.



"No one knows when the knowledge gained in laboratories like this . . . may mean to you . . . the difference between life and death."—From Michigan Heart Association film "Heart to Heart."

Pamphlets

CHALLENGE OF HEART DISEASE, by H. M. Marvin, M.D. 16 pp. booklet. Excellent description of the five types of heart disease: congenital, rheumatic, arteriosclerotic, hypertensive, and syphilitic. Summarizes achievements and needs in the field of heart disease.

DISEASES OF THE ARTERIES, by Irving S. Wright, M.D. 14 pp. booklet. Non-technical explanation of three common diseases of the arteries: arteriosclerosis, thrombo-angiitis obliterans, and Raynaud's syndrome.

DISEASES OF THE VEINS, by Nelson W. Barker, M.D. 12 pp. booklet. Describes the functions of the veins and the diseases that affect them, including phlebitis, embolism, and varicose veins.

EMPLOYMENT AND HEART DISEASE, by Leonard J. Goldwater, M.D. 6 pp. booklet. Fifteen questions and answers about employment of cardiac patients that should serve as a guide to employers in employing the handicapped, especially those with diseases of the cardiovascular system.

GOOD NEWS ABOUT YOUR HEART, by Paul D. White, M.D. 3 pp. reprint. An interesting reprint from *THIS WEEK* magazine telling the hopeful side of picture for those afflicted with heart diseases.

HEART DISEASE CAUSED BY CORONARY ARTERIOSCLEROSIS, by Paul D. White, M.D. 12 pp. booklet. Interesting examples and explanations of this common type of heart disease. Familiar terms are defined.

HEART OF THE HOME—picture edition. 28 pp. booklet. A 10-page introduction outlines in simple terms the principles of work-simplification and suggests how to apply them. Following this there are 18 pages of photographs showing ways to simplify kitchen work without investing much in equipment or carpentry.

HEART QUIZ. 12 pp. folder. Twenty questions about the human heart, correctly answered. Useful as audience participation device and general information piece.

HIGH BLOOD PRESSURE, by E. V. Allen, M.D. 12 pp. booklet. Definition, measurement, cause, seriousness, possible danger and treatment.

KNOW YOUR HEART, by Howard Blakeslee. 31 pp. booklet. A brief résumé of the work of the heart and the diseases which attack it. Booklet concludes on hopeful outlook for cardiac sufferers plus research work being carried out by various organizations.

MAN TO MAN. 6 pp. folder. A reassuring message from a heart patient who lived with a "heart condition" and liked it because he followed the advice of his family Doctor of Medicine.

RHEUMATIC FEVER. 6 pp. folder. The facts about rheumatic fever and how to guard against it.

RHEUMATIC FEVER—CHILDHOOD'S GREATEST ENEMY. 31 pp. booklet. A complete word-picture about the causes and care of rheumatic fever patients.

RHEUMATIC FEVER—SHORT LESSONS FOR "RHEUMATIC" FAMILIES. 9 pp. booklet. Danger signals of Rheumatic Fever and "Do's" and "Don't's" for parents of cardiac children.

WHAT THE CLASSROOM TEACHER SHOULD KNOW—AND DO—ABOUT RHEUMATIC FEVER. 10 pp. booklet. An excellent guide to aid the classroom teacher in assisting the medical doctor in detecting rheumatic fever in children. Excellent reading for parents also.

(Continued on Page 1144)



To cope with emergencies . . .
a needed item for the physician's bag

Anesthesia requirements in accidents and other emergencies make VINETHENE a desirable item in every physician's bag. VINETHENE is a practical inhalation anesthetic for short periods of anesthesia. Administered by open-drop technic, it induces anesthesia rapidly and blandly, and is characterized by prompt recovery with a minimum of postoperative nausea.

Literature on request

VINETHENE[®]

(Vinyl Ether for Anesthesia U.S.P., Merck)

AN INHALATION ANESTHETIC FOR SHORT OPERATIVE PROCEDURES

*Research and Production
for the Nation's Health*



MERCK & CO., INC.

Manufacturing Chemists

RAHWAY, NEW JERSEY

In Canada: MERCK & CO. Limited - Montreal

Hospitalization at 65

A "Give" But No "Take" Scheme

The Federal Security Administration supported plan of Hospitalization-at-65 won't work. It is both financially and physically unsound—the money is not there and the hospital beds are not there.

The Federal Security Administrator has reported that this hospitalization scheme can be financed by a surplus in the Social Security Trust Fund.

This claim was denied by Joseph S. Lawrence, M.D., advisor to the American Medical Association Washington office. Said Dr. Lawrence:

"There is, of course, an unexpended balance in Social Security collections which for the present is increasing because of the new members who were brought in under H.R. 6000 when it was enacted two years ago; and most of the contributors under Social Security are still young, and not many have reached the retirement age and therefore continue to pay dues. If, however, the Social Security program were ended as of today, all of the surplus and more would be required to liquidate the contracts that the government has entered into with the present contributors."

The shaky financial status of Hospitalization-at-Sixty-Five is further emphasized by a simple fact of human nature. The demand is always great when people think they can get "something for nothing." By providing hospitalization under this FSA plan, the demand would far outstrip the actual need for the service.

It would boil down to this: the thousands of persons now given adequate care outside of hospitals would immediately demand that they be admitted to the hospitals. And under the law it would be their right.

Yet, there is a rub. While these people could demand hospitalization, the number of beds available could not meet the requirements of those eligible under the act. The Division of Hospital Facilities (Hill-Burton) estimates that the country has only about half the hospital beds it now needs.

Thus an added burden would be placed on the hospitals. The bill is vague on this score. While it gives the impression that hospitalization (hospital beds) would be guaranteed to Social Security beneficiaries, actually the measure only guarantees payment of hospital costs in a semi-private room for sixty days. The patient, however, must FIRST FIND AN EMPTY BED.

Hospitalization-at-65 is but another wild scheme which is nibbling at the freedom of the American people. The "beneficiary" is forced to pay for the future service whether he wants to or not or whether or not he will even use the service later. And at the same time, there is no assurance that he will ever receive this service even if he needs it.

HEART BEATS

(Continued from Page 1142)

WHAT YOU SHOULD KNOW ABOUT RHEUMATIC FEVER. 8 pp. folder. Facts, definition, cause, treatment, and prevention.

WHY EXECUTIVES DROP DEAD. 5 pp. reprint. A highly informative reprint from FORTUNE magazine explaining the facts about heart disease and the reasons for "heart attacks."

YOUR BLOOD PRESSURE AND YOUR ARTERIES, by A. L. Crosby. 30 pp. booklet. High Blood Pressure and Hardening of the Arteries explained in detail.

YOUR HEART AND THE MICHIGAN HEART ASSOCIATION. 6 pp. folder. What the Michigan Heart Association Is and Does as a voluntary health agency.

Motion Pictures

GUARD YOUR HEART—Running time 27 minutes. 16 mm. black and white, sound story of a middle-aged,

hard-driving executive who becomes worried about his heart. Film includes illustrated lecture on the heart and heart disease.

HEART AND CIRCULATION—16 mm. black and white, sound. Running time 10 minutes. Deals with the mechanism of the heart muscle, valve action, normal sounds, rate of beat, constriction, dilation and phenomena of blood pressure. For physiology classes and lay study groups.

HEART TO HEART—16 mm. black and white, sound. Running time 15 minutes. A dramatically illustrated commentary on the heart disease problem and the nature of heart association programs designed to meet that problem.

WONDER ENGINE OF THE BODY—16 mm. black and white, sound. Running time 11 minutes. This film is the animation section of "Guard Your Heart." Particularly useful for High Schools, service clubs, etc.

in hay fever



Pyribenzamine[®] unsurpassed

as an antihistaminic agent

And the same is true in the many other allergic manifestations in which antihistamines are prescribed: *allergic rhinitis, serum sickness, angioneurotic edema, drug reactions, and itching skin conditions such as atopic and contact dermatitis and urticaria.* Recognized for its excellent therapeutic effectiveness and wide range of usefulness, Pyribenzamine is prescribed today as it was when it first became known for *maximum relief with minimal side effects.*

Ciba Pharmaceutical Products, Inc.,
Summit, N. J.

PYRIBENZAMINE (BRAND OF TRIPELENNAMINE)

Ciba

BY EP46H

Cancer Comment

POTENTIALLY CANCEROUS LESIONS AND SYMPTOMS

The following list of potentially cancerous lesions and symptoms is reprinted by permission of the *Pennsylvania Medical Journal*. This list was prepared by the Cancer Commission of the Medical Society of the State of Pennsylvania and includes practically all conditions that would cause the physician to suspect cancer when making a physical examination.

SKIN

- Keratotic lesions showing any change in character or size.
- Warts or moles which may be subjected to irritation or which show any change in size, character, or color, especially those located along the collar, brassiere, girdle or belt line, and in the axillary, inguinal, and perineal regions and feet.
- Any lesion of skin of adult showing tendency to grow.

LIP

- Keratosis.
- Leukoplakia.
- Verruca.
- Fissures, persisting over four weeks.
- Chronic persistent desquamative cheilitis.

TONGUE

- Irritated mucous membrane associated with poor mouth hygiene.
- Any wart-like growth, sore, or ulcer.
- Leukoplakia with or without syphilis.
- Node in the neck.

MOUTH OTHER THAN TONGUE

- Swelling or thickening of oral mucous membrane.
- Wart-like growths of ulcers on cheek, gum, floor of mouth, palate, or tonsils.
- Leukoplakia with or without syphilis, especially buccal surface.
- Plummer-Vinson's disease.

LARYNX

- Persistent hoarseness.

ACCESSORY SINUSES

- Any persistent discharge which is unilateral.
- Persistent bleeding.
- Unexplained pain.

PAROTID GLAND

- Any nodule or mass.

THYROID GLAND

- Any solitary nodule.
- Rapid increase in size.

LUNG

- Any mass lesion which is found on x-ray examination with or without symptoms should be considered as possibly malignant.
- Persistent cough or asthmatic wheezing.

ESOPHAGUS

- Spasms and difficulty in swallowing.
- Plummer-Vinson's disease.

STOMACH

- Persistent indigestion.
- Any mass found on routine survey.
- Any ulcerative lesion of stomach found in x-ray examination is under suspicion.

LARGE BOWEL

- Unexplained anemia.
- Variation in bowel habit.
- Palpable abdominal mass.

RECTUM

- Polyps.
- Unexplained rectal bleeding.
- Constipation or diarrhea. Change in bowel habits.

BREAST

- Any solitary lump in the breast may be cancerous.
- Bloody or serous discharge from the nipple.
- Crusting or thickening of nipple.
- Unaccounted for dimpling of breast.

VULVA AND EXTERNAL GENITALIA

- Any ulcerated lesion of undetermined etiology.
- Leukoplakia or kraurosis.
- Pigmented moles.

VAGINA

- Any ulcerated lesion of undetermined etiology.
- Watery, irritating, or blood-stained discharge.

CERVIX

- Post-coital or post-douche bleeding.
- Any erosion with or without eversion.
- Leukoplakia.

UTERUS

- Menorrhagia, metrorrhagia.
- Any abnormal bleeding, especially after menopause.

OVARY

- Any persistent cystic ovarian enlargement over 4 cm. in size.
- Any solid ovarian neoplasm.
- Vague low abdominal pain.

PROSTATE

- Any nodule.
- Change in urinary stream.

URINARY TRACT

- Painless bleeding.

TUMOR OF TESTIS

- Any enlargement of testicle.

SOFT TISSUE SARCOMA

- Any subcutaneous mass of unknown origin.

BONE MALIGNANCY

- Pain or enlargement.

Squamous cell carcinoma in lymph nodes is more resistant to irradiation as a rule than the primary site.

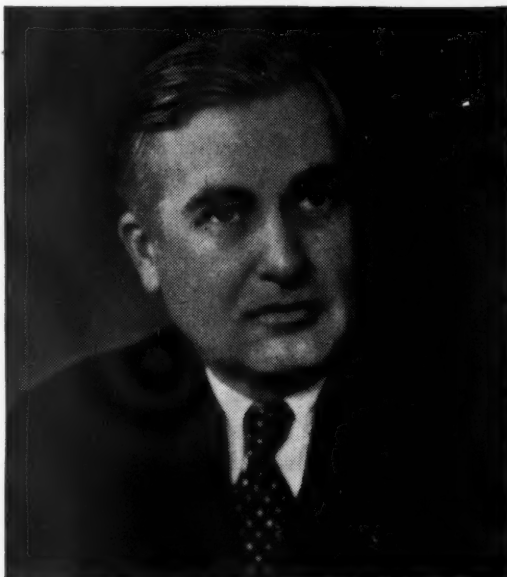
* * *

No visible or palpable neck tumor should be blindly treated without definite diagnosis.



MRS. ELEANOR ROOSEVELT

World-famous wife and mother; Senior United States Representative of the United Nations General Assembly; author, radio and television commentator; internationally respected and admired for her interest in, and understanding of, all peoples.



HONORABLE CHARLES EDISON

Son of the late Thomas A. Edison; former Assistant Secretary and then Secretary of the Navy; former Governor of New Jersey; guiding force as officer and/or director in many nationally known civic, educational and industrial organizations.



MR. RUPERT HUGHES

Author, playwright, producer, poet, biographer, composer; chief assistant editor of the 25-volume History of the World published by Encyclopaedia Britannica; veteran of two world wars; Hollywood writer, Doctor of Letters, director and commentator.

These three great
Americans can afford any
type of hearing aid
at any price. They wear
the seventy-five dollar
Zenith hearing aid.

BIOGRAPHICAL DATA BASED ON
"WHO'S WHO IN AMERICA."

Editorial Comment

CAME NOT BACK AGAIN

This happy land, a good land just this side of Paradise, is the creation of the marching men who worked and bled and died for the America that is. Of those legions who came not back again everyone has memories more meaningful than just words.

May we in this happy land ask not what can we get but what do we owe to this free country? From Valley Forge to yesterday this great land is kept free by those who marched away singing and on July 4 we think of those who came not back again. Came not back again.—Dave Sugar, Editorial, *Detroit Medical News*, July 7, 1952.

A LOST GOVERNMENT

The people, once the government, have lost their sovereignty and have become slaves to the government they once possessed. They have sold their liberty and independence for subsidies and so-called security. All good citizens who are mature in mind with a normal sense of honor and integrity, are conscious of the insults heaped upon them by the bureaucrats in high places. How long must we endure the stupidity of an irresponsible, extravagant government that insists that the people cannot be trusted with their own local affairs including sacred personal interests such as making their own homes, saving their own money, and choosing their own doctors and doing their own charity.

Without consulting the people or their representatives, Mr. Truman confiscates private property, while Mr. Ewing proposes to use one man's money with which to pay another man's hospitalization costs. In plain English it amounts to this—a man turns over to a stock buver the estimated price of a pig. The pig is delivered. Nothing is said about the cost. But in time the man is notified of the fact there was a surplus and instead of returning it, he is using it to purchase a pig for someone else, perhaps the original purchaser's neighbor who never works and never saves, or perhaps the pig goes to a perfect stranger.

Is this gross injustice due to both deception and theft or is it the result of plain insanity. Is there any recourse? Yes, when only a pig is at stake, the offender is only a stock buyer, responsible for his acts. Not so when people are the objects of concern. Mr. Ewing is a bureaucrat. He can take our money, which should be refunded and spend it for the so-called security of others saying service will not cost us anything. That he can do this without batting an eye reveals his opinion of our intelligence.

How long, Oh Jupiter, must we endure such in-

justice! Shall we raise hell now and call a halt or shall we await the evil day of revolution. In the latter event, upon whose hands will the blood be? —Editorial, *The Journal of the Oklahoma State Medical Association*, June, 1952.

DOLLAR DEBACLE

News that merchants across the river in Windsor and other Canadian cities now are demanding three cents more for every American dollar spent should call for sober reflection from every American.

It was not long ago that the proud American visitor in Canada enjoyed a discount on every purchase he made. Today, he must pay a premium.

For many years, the American dollar has been the most sought-after currency in the world. Now it has depreciated in value.

One of the causes for this monetary embarrassment has been the unchecked spiral of inflation in this Country.

One of the reasons that Canadian money is "hard" is because that nation has successfully prevented inflation.

We suggest that our economic "experts" in Washington take a trip to Ottawa to see how it is done.—*Detroit Free Press*, July 14, 1952.

STRANGE OATHS

We have just been vouchsafed new light on this time-honored Shakespearean phrase. We received a letter from a young layman, a college student, who asked us for a transcript of the Oath of Hypocrites (*sic*) to use in writing a thesis.

This office, however, has no dealings with Hypocrites. We were compelled to write the young man our regrets; we could not help him. But his letter set us to musing. We began to reconstruct the man Hypocrites as archaeologists reconstruct a dinosaur, from an evidential rib or two he has left behind. That he existed, there is little doubt; he left so many direct descendants as to make this almost a certainty. That he had vigor and strength (of a kind), ambition and purpose (of a kind) and an immense talent for turning things to his own advantage seems without doubt, as even a casual study of the family line makes clear.

We conceive him to have been a contemporary of Hippocrates and to a certain extent his imitator. We dare say he had pupils and administered them an oath. We dare say he had patients and administered them—who knows what? We dare say

(Continued on Page 1150)

New aureomycin minimal dosage for adults—four 250 mg. capsules daily, with milk.



Library, Union League Club, Philadelphia, Pa.

From among all antibiotics, Dermatologists often choose
AUREOMYCIN

Hydrochloride Crystalline

because

Aureomycin provides mild bacteriostasis in diseases of the skin.

Aureomycin has been found effective in pinta, yaws and many bacterial infections of the skin (furunculosis, impetigo, pyogenic dermatitides, sycosis vulgaris and tropical ulcer). It is at present considered preferable to administer the drug systemically in these conditions. Aureomycin is also useful in the control of contributing or secondary infections associated with many dermatoses.

*Throughout the world, as in the United States, aureomycin is recognized
as a broad-spectrum antibiotic of established effectiveness.*

*Capsules: 50 mg.—Bottles of 25 and 100; 250 mg.—Bottles of 16 and 100.
Ophthalmic: Vials of 25 mg. with dropper; solution prepared by adding 5 cc. distilled water.*

LEDERLE LABORATORIES DIVISION *AMERICAN Cyanamid COMPANY* 30 Rockefeller Plaza, New York 20, N. Y.

SEPTEMBER, 1952

Say you saw it in the Journal of the Michigan State Medical Society

1149

STRANGE OATHS

(Continued from Page 1148)

he had colleagues, in whose praise he sometimes spoke at public meetings, thus acquiring a reputation for impartiality and even generosity of mind, and at the same time left himself free to work against the aforementioned colleagues in private.

Unfortunately for us as well as for our young correspondent, Hypocrites' Oath is no longer available. Great distinction undoubtedly awaits any who shall discover this historic document. We conceive of it as modeled (outwardly) after the limpid honesty of the Hippocratic Oath, but honeycombed with secret passages through which Hypocrites might escape at any moment. For Hypocrites, we think, was a smallish man.

There have been whispers that the oath is extant; that it passes from hand to hand under cover of darkness, and that it is even administered now and again to fledgling medicos who can be persuaded that it is merely the Hippocratic Oath brought down to date, adapted to modern conditions and a great deal less cumbersome to live up to. If this is true, it explains a number of things we have found—and are finding—exceedingly hard to understand.—*Journal, International College of Surgeons*, July, 1952.

PROUD RELIEFERS

It used to be a disgrace to be on welfare. But, in recent years, more and more Americans proudly brag they are on relief. They insist loudly that the world owes them a living.

Despite this self-proclaimed "right" to be supported by the taxpayers, social workers insist welfare rolls must be kept secret because a recipient would have a "traumatic experience" if his landlady or neighbor knew he was on relief.

Now comes word from South Carolina that a poll of recipients shows that several would be disappointed unless their names appeared in the papers as being on the relief rolls.

It used to be a saying that a person is entitled to have his name in the paper three times—when he is born, when he marries and when he dies.

Should we now add—when he goes on relief?—*Detroit Free Press*, July 14, 1952.

FRUITS OF FREE RESEARCH

"The American Medical Association's annual convention, now in session in Chicago, is a clearing house for progress."

"Healing discoveries developed through the researches of individuals and groups are explained and exchanged and become the common possession of all members of the profession as weapons against disease."

"If left wingers who denounce the American Medical Association as a trust had deliberately

set out to dream up the silliest charge imaginable they could not have done better.

"Far from restricting and restraining the use of new medical information, the AMA hastens to distribute it as rapidly as possible for the widest possible use."

"The real reason why the AMA is disliked by Fair Deal Socialists and other enemies of free enterprise is that it opposes socialized medicine."

"The medical progress being spread on the record at the convention this week proves how right the association is in resisting governmental regimentation."

"These new discoveries have been made by medical scientists free to develop their own ideas and to pass the benefits of their knowledge along to their patients."

"The medical profession is entirely right in believing that its own trained and dedicated members are better able than any group of politicians to look after the nation's health."

"They are doing it superbly. Every day they learn some new way to do it better."

"The most effective way to check this progress and reduce all medical practice to static mediocrity would be to submit the medical profession to the deadening control of a political bureaucracy."

"For the nation's sake we must help the AMA fight off power-hungry politicians and keep American medicine free."—*Chicago Herald-American*.

HEALTHY AMERICA

A study by the Brookings Institution shows that the average death rate in the United States has been cut nearly in half in the past 50 years.

This has been brought about by advances in medical science, the increased use of medical facilities and the control of communicable diseases.

The advances were made and applied under the free enterprise system by researchers and doctors working for private concerns or for themselves.

The medical record of the past 50 years is the best answer we know of to the demands of those who would seek to socialize medicine. Will Oscar Ewing please take note.—*Detroit Free Press*, August 15, 1952.

WITH NO EXCEPTIONS


"Like Your Doctor? The question was: 'How do you like your doctor?' The typical reply from some 700 reputed community leaders came back: 'We like our doctors, but our doctors don't seem to like us.' To meet that criticism the American Psychiatric Association and the Association of American Medical Colleges who conducted the survey have recommended more schooling for medical students in human relations." . . . Editorial, *The Detroit News*, June 16, 1952.

The editorialist, tucking tongue in cheek, then

(Continued on Page 1152)

clinically accepted
 for
 increased safety
 high degree of efficacy
 excellent palatability
 in triple
 sulfonamide therapy
 council-accepted
tri-sulfameth

Each 5 cc. (approx. one teaspoonful) of syrup or each tablet provides:

	Sulfamethazine	0.165 Gm.	(2.5 gr.)
	Sulfadiazine	0.165 Gm.	(2.5 gr.)
	Sulfamerazine	0.165 Gm.	(2.5 gr.)
	Sodium Citrate*	0.5 Gm.	(7.7 gr.)

*not contained in Tri-Sulfameth Tablets

"Trials of sulfonamide combinations . . . have indicated that the occurrence of crystalluria can be decreased to negligible proportions." Virginia Medical Monthly 75:56, 1949.

PROFESSIONAL SAMPLES ON REQUEST



casimir funk laboratories, inc.

affiliate of U. S. Vitamin Corporation
 250 East 43rd St., New York 17, N. Y.

Your New Electrocardiograph-- WILL IT HAVE THESE FEATURES?

CONTINUOUS TIME MARKER

independent of the chart; assures accuracy of the time factor.

AUTOMATIC LEAD MARKER

obviates guesswork; you *know* which lead is recorded.

PRECISION RECORDING

sensitive to rapid changes in potential; no rounding of sharp peaks.

SIMPLE OPERATION

selection of lead at the turn of a switch; rapid talibration; controls all on one panel; portability; a clear, permanent record.

All these features are available in the

Burdick

E K - 2 DIRECT-RECORDING ELECTROCARDIOGRAPH

THE BURDICK CORPORATION Milton, Wisconsin

Send me information on the Burdick Direct-Recording Electrocardiograph.

☐ I would like a demonstration.

Dr. _____

Address _____

City _____ Zone _____ State _____

THE G. A. INGRAM COMPANY
4444 Woodward Avenue, Detroit 1, Mich.

WITH NO EXCEPTIONS

(Continued from Page 1150)

pontificates as follows: "If there is a school that teaches the kind of human relations that makes warm and friendly doctors, we haven't heard about it." And neither have we, nor have we heard of any other school—with no exceptions—that could by any device make anyone either warm or friendly, much less both warm and friendly. No brethren! Such things are the stuff that come as gifts from the gods. We have the essence of them when we come into the world, and it is in our homes that such qualities bloom or wither. The school can only nurture and develop what is brought to it. It can't create. What the editorialist said about doctors applies as well to workers in any and all fields—with no exceptions. We say this not in defense of medical schools or our confreres. We say it as an amen to the editorial's proper indictment of the mores of this the 20th century A.D.

And as a point of information, medical school faculties anticipated the change that would take place in the doctor when medicine passed from the empirical stage, when the doctor had little more than warmth and friendship to offer, to the present highly accurate scientific era. For many years now they have accented human relations in the student's approach to the patient. For example: Each year, a group of Detroit's leading physicians augment the faculty in Sociology, at the College of Liberal Arts of Wayne University, to stress the human side of medicine to premedical students.

With those who come to them with warmth and friendliness as part of their makeup, the medical schools do well. With those barren of such qualities the medical schools do no better or no worse than do other schools.—FRANK A. WEISER, *Detroit Medical News*, July 28, 1952.

THE CASE AGAINST THE INCOME TAX

The great weight of the burden of the average taxpayer has come to be recognized by the medical profession as a definite mental oppression upon many of our people. In a quiet, homey talk with an eminent physician recently, he stated that many psychopathic cases can be laid at the door of the income tax laws. Frustration, discouragement, and the inability of people, he says, to accommodate their minds to these oppressive and dictatorial laws bring them to the verge of "cracking up." Often members of their families literally have to drag them to competent medical advisers. Then starts a long and protracted fight to restore their health. In truth, he said, it is difficult even for the stolid, sturdy individual, let alone the weak and the sick, to withstand the pressures brought upon them by the government.—From "Man to Man," by BERNARD N. WARD, C.P.A., The Caxton Printers, Ltd., Caldwell, Idaho, 1952.

"PREMARIN"®

Highly effective • Well tolerated • Imparts a feeling of well-being

"PREMARIN"

Most menopausal patients
experience striking relief
of symptoms with "Premarin."

"PREMARIN"

Estrogenic Substances (water-soluble)

"PREMARIN"

also known as Conjugated Estrogens (equine)

"PREMARIN"

5202 AYERST, McKENNA & HARRISON Limited • New York, N. Y. • Montreal, Canada



Military Medicine

ARMY MEDICAL SERVICE AND FCC SAVE \$148,500 IN DIATHERMY EQUIPMENT

A saving of approximately \$148,500 has been effected by the modification of diathermy equipment used at Army and Air Force medical facilities, the Department of Defense announced.

Modification of the equipment, which is used in applying heat treatments to deep-lying muscles and tendons, was made necessary by a 1947 ruling of the Federal Communications Commission changing the frequency bands assigned to diathermy apparatus. In addition, it was necessary to develop a shielding to reduce radiation which caused interferences with communication systems and high frequency equipment in the vicinity of the machines.

Approximately 450 units manufactured prior to July 1, 1947, were ordered taken out of operation after June 30, 1952, by the Federal Communications Commission unless they met requirements established by the regulations of that agency. The cost of replacing such a large number of machines with new equipment meeting the prescribed standards would have amounted to an estimated \$184,500. This anticipated expenditure prompted the Army Medical Service to seek ways and means of altering the units at hand to conform with the ruling.

The initial modification, undertaken at the request of the Army Surgeon General, was devised by Federal Communications Commission engineers working with an electronics consultant retained by the Surgeon General. Their combined efforts produced a converted unit which satisfied the requirements of the FCC regulation. Using this rebuilt machine as a model, a second one was produced by military personnel of the Surgeon General's Office and was approved by the Commission in September, 1951.

Skilled medical equipment maintenance personnel at medical depots and Army and Air Force installations throughout the United States and overseas then began a program of converting all existing diathermy units along the lines laid down by the Surgeon General. The cost of modification, including labor and materials, amounted to \$80 per unit, totaling \$36,000 for all of the 450 machines as compared to the replacement cost of \$184,500.

The method of conversion has recently been adopted by the Navy for its older diathermy machines. Instructions on proper procedures for modifying existing units have also been made available by the Federal Communications Commission to civilian institutions and Federal health agencies, thereby making possible further economies for users of diathermy equipment.

ARMY HOSPITAL CONSTRUCTION APPROVED; WORK BEGINS EARLY NEXT YEAR

Following final approval by Chief of Staff, Army Surgeon General's office announced construction will begin early next year on the first of seven permanent, modern hospitals. Plans call for completion of the multi-story

structures in three years; together they will have a minimum capacity of 3,200 beds and are *designed for quick expansion during mobilization*. Five-hundred-bed hospitals expandable to 1,000 beds will be built at Fort Benning, Ga.; Fort Bragg, N. C.; Fort Knox, Ky., and Fort Riley, Kansas.; 250-bed hospital expandable to 500, at Fort Belvoir, Va.; 200-bed hospital expandable to 300 at Fort Monmouth, N. J., and 750-bed hospital expandable to 1,000 at Fort Dix, N. J.

General Armstrong said plans prepared by leading civilian and military authorities in the hospital design field have reduced to a minimum luxuries and extras while conserving steel and other scarce materials. Findings of three-year Army research in hospital management will be incorporated in construction, resulting in economy in use of nurses, ward technicians and other scarce personnel.

PHYSICIANS AND DENTISTS INDUCTED IN ARMY AND AIR FORCE

The Department of Defense has requested the Selective Service System to deliver to Armed Forces Induction Stations 355 doctors of medicine and ninety doctors of dentistry during the month of September.

The Armed Forces will assign 180 physicians to the Army and 175 to the Air Force.

All of the dentists will be assigned to the Air Force.

The September call for physicians and dentists brings to a total of 1,522 the number of physicians and to 650 the number of dentists requested since July, 1951.

ARMED FORCES MEDICAL LIBRARY

The appointment of Lieutenant Colonel Frank B. Rogers, MC, USA, as Director of the recently established Armed Forces Medical Library was announced by Secretary of the Army Frank Pace, Jr., with the concurrence of the Secretary of Defense.

Colonel Rogers has served since October, 1949, as the Director of the Army Medical Library, the largest such institution in the world, which is the nucleus for the new establishment.

The Armed Forces Medical Library serves as a central medical library for the Army, the Navy, and the Air Force, and as a national library for medicine and related sciences. In addition to the medical activities of the military departments, the facilities of the library are available to other governmental agencies, medical research and development contractors, and civilian physicians and medical scientists.

During the fiscal year 1951, more than 29,700 books were lent to borrowers in the United States. During that same period requests for information numbered 55,900. Through its photoduplication service, the library is able to furnish microfilms or photostatic copies of desired material for a very nominal sum. Also available are microfilm copies of publications which may be obtained on a loan basis. The photoduplication service received 56,000 orders requiring over 1,500,000 pages of film and print reproductions during fiscal year 1951.

From Birth
Through the
"Toddling"
Age...



Baker's Modified Milk

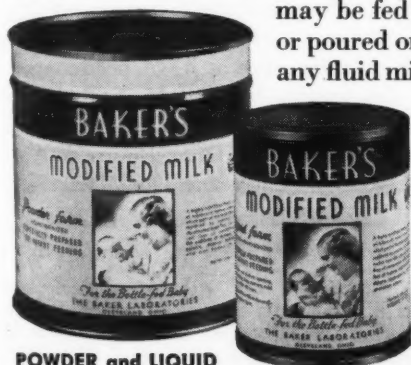
MORE and more doctors everywhere are prescribing Baker's Modified Milk because Baker's is prepared especially for feeding newborn and young infants from birth to the end of the bottle-feeding period.

For Toddlers, too, Baker's Is Ideal

When the bottle-feeding period is ended, Baker's Modified Milk in normal dilution** may be fed from a cup or poured on cereal like any fluid milk. Because

it provides a nutritionally adequate* formula, containing proteins, carbohydrates, essential fatty acids, minerals and vitamins, Baker's can be used to advantage during baby's entire first year of life.

Many thousands of infants thrive on Baker's—and many thousands of "toddlers" raised from infancy on Baker's continue to deserve Baker's as part of their daily diet. You can continue to prescribe Baker's until the infant reaches the "run-around" age.



POWDER and LIQUID

Made from Grade A Milk (U. S. Public Health Service Milk Code) which has been modified by replacement of the milk fat with vegetable and animal fats and by the addition of carbohydrates, vitamins and iron.

*When fed in normal quantities, provides amounts of proteins, vitamins (except C), minerals and essential unsaturated fatty acids equal to or exceeding the daily recommended allowances of The Food and Nutrition Board of the National Research Council.

**Dilute with equal parts of water.

BAKER'S MODIFIED MILK

THE BAKER LABORATORIES INC.

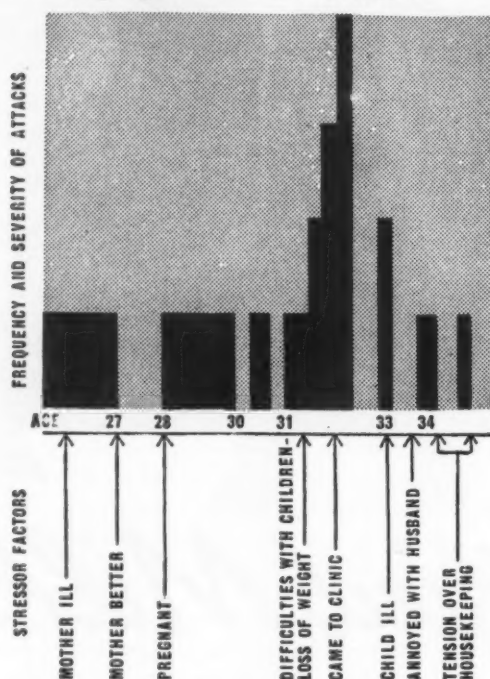
Main Office: Cleveland, Ohio
Plant: East Troy, Wisconsin

Division Offices: Atlanta, Dallas, Denver,
Greensboro, N. C., Los Angeles, San Francisco, Seattle



Stress . . .

Stressor factors which evoke autonomic responses occur often in our civilization. They are not always of external origin, frequently, stress springs from the "well of uncertainties, the fears, the angers, and the hostilities that an inadequate childhood nurtures in troubled people in a troubled world."¹



After: Relationship Between Life Stress And Symptoms —
Stevenson, I.: G.P. 4: 67 (Dec.) 1951

When emotions aroused by these stresses are not dissipated in appropriate biological behavior, heightened autonomic impulses beat against a "moored" physique.¹

Incessant "emotional buffeting" impinged on labile autonomic pathways is likely to produce deviations from normal body function and a *rash of symptoms*. In such cases, both branches of the autonomic nervous system are involved. For symptomatic relief oral administration of cholinergic and adrenergic blocking agents and central sedation has proven successful. Drugs effective for the several actions respectively are: belladonna alkaloids, ergotamine tartrate and phenobarbital. These drugs may be used individually or in combination,* as required by the individual case, to effect more stable function of the autonomic nervous system, thereby "dampening" overactivity of the involved organ systems.

* Dosage of each ingredient adjusted to the needs of the particular patient.

¹Cleghorn, R. A. and Graham, B. F.: *Recent Progress in Hormone Research*, Vol. IV, New York, Academic Press, Inc., 1949, p. 323.

Sandoz Pharmaceuticals
DIVISION OF SANDOZ CHEMICAL WORKS, INC.
68 CHARLTON STREET, NEW YORK 14, N. Y.

Civil Defense

FLOW OF SUPPLIES STARTS FOR FEDERAL CIVIL DEFENSE MEDICAL STOCKPILES

After months of negotiations, Federal Civil Defense Administration reports that on July 15 it had \$1,574,378 in medical supplies and equipment stored in seven federal regional warehouses. This is 2.67 per cent of the \$60 million Congress made available up to July 1, all now on contract. Almost all material was received after June 1, and shipments soon will be "mushrooming," FCDA said. Regional stockpiles are purchased and maintained entirely by U. S. funds; they are designed to supplement state and local supplies in case of a disaster.

State procurement programs, which FCDA has been pushing for over a year and for which U. S. supplies half the funds, are farther advanced. Half of the \$20 million originally earmarked for these matching grants has been used by 13 participating states; on July 15 they had received \$3,159,664 in supplies, about a third of the amount on order.

Antibiotics make up a majority of federal supplies and also are the highest dollar-value item going to states. Currently, FCDA officials are working on a budget for fiscal 1953. One problem is to determine how much to spend on the blood program and how much for other medical supplies. Congress allowed FCDA \$40 million this year for all agency expenses, in contrast to about \$100 million last year.

CIVIL DEFENSE BOOKLET NOW AVAILABLE

The AMA Council on National Emergency Medical Service has just completed publication of a new booklet, entitled "Medical Aspects of Civil Defense," which contains a series of articles sponsored by the council and published in the AMA Journal during the past year.

Many requests for the booklet already have been received. It sells for 25 cents a single copy, and 20 cents per copy for orders of 100 or more. Orders may be placed with the council's office at AMA headquarters.

Contents of the booklet include: Medical Aspects of Civil Defense, Chemical Defense, Atomic Burn Injuries, Radiological Aspects of Civil Defense, Nature of Air Raid Casualties, and Mental Health and Civil Defense.

In more than 40,000 gastrointestinal x-rays for cancer made at Johns Hopkins Hospital, the disease was found in 0.2 per cent of the series or one per 476 examinations.

* * *

The ultimate test of cancer education is the extent to which patients seek detection examinations.

* * *

As long as any considerable number of people continue their unwillingness to see or hear informative facts about cancer, just so long must the educational program be pursued with intensified vigor.

The JOURNAL

of the Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

VOLUME 51

SEPTEMBER, 1952

NUMBER 9

Activities of the Arthritis and Rheumatism Foundation

By Henry T. Ewald

Chairman, Michigan Chapter
Arthritis and Rheumatism Foundation
Detroit, Michigan

THE LAST FISCAL year of the Michigan Chapter, Arthritis and Rheumatism Foundation, was noteworthy for the development of a new activity to help arthritic sufferers. Dr. James J. Lightbody, our forward-thinking medical director, suggested in September, 1951, that we try to do something for "shut-in" sufferers of arthritis, and in October we started a pilot test in the Detroit area through the Visiting Nurse Association.

The treatments are given by nurses of this association trained in physical therapy. Those able to pay do so, while the bills of those unable to pay are financed by our Michigan Chapter.

So successful was this work in Metropolitan Detroit that we extended the activity, several months ago, to ten other communities in Michigan, through the local Visiting Nurse Associations. As a result we are now also financing deficits on nursing service to arthritics in Grand Rapids, Flint, Pontiac, Bay City, Lansing, Ann Arbor, Muskegon, Kalamazoo, Saginaw and Marquette.

At our annual meeting last July we set aside \$36,000 for this work for the twelve-month period which started August 1.

While we took on this new service activity, we have continued our grants-in-aid for arthritis research to Michigan medical schools, hospitals and clinics having facilities and personnel to carry on such work effectively.

Grants-in-aid for arthritis research for the three-

year period ending July 31 have totaled \$218,000, and we have appropriated \$80,000 for arthritis research for the twelve-month period which started August 1. Thus at the end of a four-year period we will have expended just under \$300,000 for research in the State of Michigan.

Eight different research projects are now being underwritten by us in seven different institutions in Michigan.

For making possible our activities I wish to extend sincere appreciation to the United Health and Welfare Fund of Michigan, which provides our funds, represented in Metropolitan Detroit by the United Foundation—and to the able leader of this organization, Dr. Warren B. Cooksey, who again has been re-elected president of this organization. This fund-raising state federation is gaining in stature each year through its growing efficiency, and I again wish to call the attention of all medical doctors in all communities in Michigan to the magnificent financial backing United Health is providing them in conquering diseases of all kinds. It seems only reasonable to me, then, that all medical doctors should help this federated fund-raising organization in their respective communities during the local campaign.

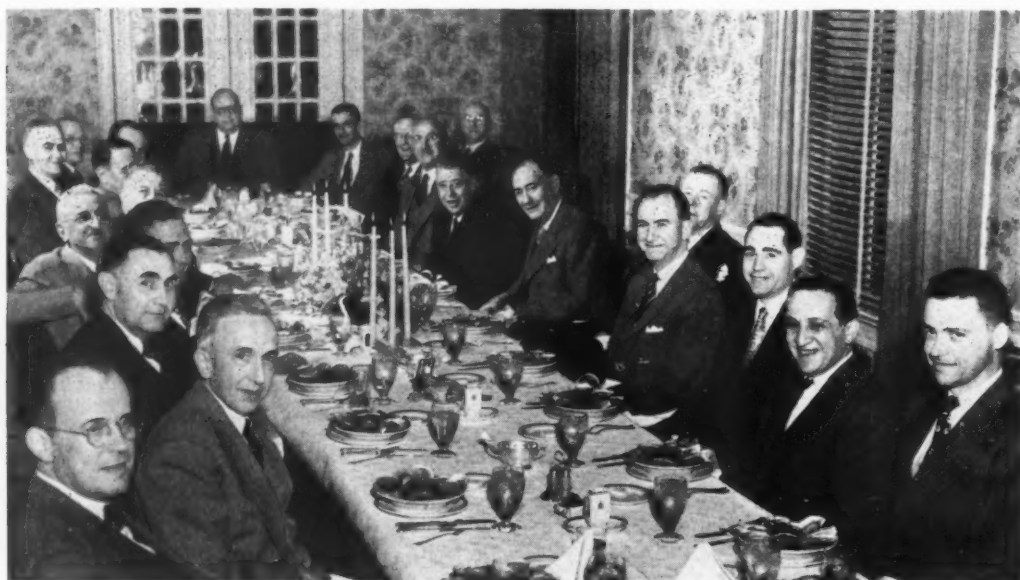
What a magnificent job United Health and Welfare of Michigan is doing in providing funds may be deduced from the fact that last year our Michigan Chapter received more money from this organization than was raised by any of the other twenty-three chapters affiliated with the national Arthritis and Rheumatism Foundation, with the exception of the New York State Chapter, which has headquarters in wealthy New York City.

TO THE JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY, we extend sincere thanks for again devoting practically this entire issue to papers on arthritis—primarily reporting the results of our various research projects. Information itself is

THE ARTHRITIS AND RHEUMATISM FOUNDATION—EWALD

useless unless it is disseminated and put to use. We think this issue of *THE JOURNAL* makes fruitful the findings of our research projects of the last

items of public interest and representation and talks at various gatherings by our medical director, Dr. Lightbody.



Mr. Henry T. Ewald, President of Campbell-Ewald Company, gave a reception at the Detroit Club, March 5, 1952, for General George C. Kenney, President of the National Arthritis Foundation, and for the physicians in charge of the various research projects of the Michigan Chapter. General Kenney had just completed a tour of all of the Chapters of the National Foundation. He gave a very complete and detailed report of the activities of the Foundation throughout the country and stated that the Michigan group was the best organized of any he had seen. He complimented the physicians who were supervising the projects of the research groups in Michigan for their contributions to investigative medicine. Members of the Board of Directors of the Michigan Chapter were present at this reception.

Reading from left to right around the dinner table are the following: Dr. Gordon M. Myers, Professor of Medicine, Wayne University; Dr. Dwight C. Ensign, Chief of Arthritis Department, Henry Ford Hospital; Dr. Alvin Price, Head of Arthritis Department, Harper Hospital; Mr. Lewis S. Robinson, Vice President, National Bank of Detroit; Dr. Hugo A. Freund, President, Child Research Center of Michigan; Dr. J. J. Lightbody, Medical Director, Michigan Chapter; Mr. Walter Laidlaw, Vice President and General Manager, United Foundation; Mr. D. E. Mitchelson, Treasurer, Parke-Davis and Company; Dr. E. C. Vonder Heide, Clinical Research, Parke-Davis and Company; Dr. Frank A. Weiser, Medical Director, Grace Hospital; Mr. Sterling Eaton, Publisher, *Plymouth Mail*; Dr. William D. Robinson, Professor of Medicine, University of Michigan; Mr. John W. Stannard, Business Manager, Michigan Chapter; Mr. Oscar L. Buhr, Vice President, Detroit Trust Company; Dr. Earl A. Peterman, Head of Arthritis Research, Providence Hospital; General George C. Kenney, President, National Arthritis Foundation; Mr. Henry T. Ewald, President, Campbell-Ewald Company; Mr. H. J. McLaurin, General Agent, Aetna Insurance Company, Detroit; Mr. Wm. W. McPeak, Ford Motor Company executive, and representative of Budget Committee, United Foundation; Mr. James A. Kintz, Secretary, Budget Committee, United Foundation; Dr. Samuel D. Jacobson, Medical Director, Wayne County General Hospital; Dr. Ernest Gardner, Professor of Anatomy, Wayne University.

twelve months. It is a most important part of our general educational activity—along with pamphlets about the home care of arthritic sufferers which we gave out this last year—the showings of our motion picture—exhibits at meetings of the Michigan State Medical Society and other groups—news

To the Board of Directors of the Michigan Chapter, Arthritis and Rheumatism Foundation, I wish to extend sincere appreciation for their conscientious work as a body, and their willingness, individually, to carry out assignments given them throughout the year.

Arthritis Research in Michigan

III. Arthritis Foundation Expands Home-Care Program

By J. J. Lightbody, M.D.
Detroit, Michigan

THIS IS THE third year that the September number of the Michigan State Medical Society JOURNAL has been devoted to arthritis and rheumatic diseases. The Michigan Chapter of the Arthritis and Rheumatism Foundation and the members of the Michigan Rheumatism Society have accepted this privilege and responsibility of publication, and we hope that in the future there will continue to be a renewed interest in the field of arthritis manifested by the physicians in the State of Michigan.

The Arthritis Foundation has been interested primarily in the field of research into the various causes of arthritis and has been investigating newer methods of treatment of rheumatic diseases, but during the past year there has been increased activity and interest in offering more direct conventional services to the invalid arthritic person at home.

During the past year, through its Medical Advisory Committee and the Board of Directors, the foundation has granted assistance in the operation of arthritis research at Wayne County General Hospital, Child Research Center of Michigan, Henry Ford Hospital, Grace Hospital, Harper Hospital, Receiving Hospital, University of Michigan, Providence Hospital, and Wayne University. Most of the research groups are investigating newer methods of treatment by continuing their observations on a clinical level with the use of various drugs and hormones, particularly the steroid preparations. Only one basic research problem has been under investigation during the past year, and this one was supervised by Dr. Ernest Gardner, professor of anatomy at Wayne University. Several of the investigating groups actually have combined basic and clinical problems.

Much of the original investigation of the clinical effects of cortisone and ACTH was done in Michigan in the research projects whose activities have

been subsidized partially or completely by the Arthritis Foundation. We hope, during the coming year, that interest in arthritis research may be stimulated in many other parts of the state, and if there is some particular clinical problem related to arthritis which any individual or group of individuals associated with hospitals or clinics would be interested in developing as a program of research, the Foundation would be very interested in considering a potential project for financial assistance.

Numerous scientific articles have appeared in a large number of medical journals that have been written by men who are actively engaged in research projects supported by the Foundation. One of the objects of the Foundation is to stimulate medical writing on arthritis so as to accentuate the factor of accurate observation of patients and to report more completely the results observed in treatment.

Statistics on the number of arthritics in the State of Michigan and in this entire country are very inaccurate, and there is a great need for a survey of the general problem of arthritis in relation to industrial and occupational disability. One of the members of the Medical Advisory Committee is at present interested in attempting to make a detailed survey of the incidence of arthritis and allied diseases in one of the large industrial plants in the City of Detroit. This survey will demand the full co-operation of the medical department of the corporation, and the information obtained from this type of survey would be invaluable in determining the serious social and economic consequences associated with acute and chronic disability due to musculoskeletal disorders of an arthritic nature.

The Board of Directors of the foundation on recommendation of the Medical Advisory Committee, have approved the continuation of research projects at the following places for next year:

1. Wayne University—Department of Anatomy
2. University of Michigan
3. Providence Hospital
4. Receiving Hospital—Department of Radiology
5. Receiving Hospital—Department of Medicine
6. Child Research Center
7. Henry Ford Hospital
8. Harper Hospital

Dr. Ernest Gardner, professor of anatomy, Wayne University, is planning to continue a study of connective tissue from the point of view of

Dr. Lightbody is medical director of the Arthritis and Rheumatism Foundation, Detroit 2, Michigan.

embryology with special attention to the study of growth rates of chick embryos and fetuses. Dr. O'Rahilly is assisting Dr. Gardner in this basic research project.

Dr. William D. Robinson of the University of Michigan will continue his investigations with long-term hormone therapy and evaluate the new steroid hormones as they become available. Methods of counteracting the undesirable effects of ACTH and cortisone will be explored on a limited number of patients, and the possibility of a combined medical and orthopedic surgical program for rehabilitation of the arthritic is also under consideration. Certain patients with rheumatoid arthritis would be investigated from the standpoint of treatment with the use of antibiotics or nitrogen mustard.

Dr. E. A. Peterman of Providence Hospital will continue his study of long-acting corticotropin in chronic arthritis with the use of a gelatin menstruum and the addition of enzyme inhibitors.

Dr. James Lofstrom, professor of radiology and head of the X-Ray Department of Receiving Hospital, will begin an involved study of osteoarthritis in relation to characteristic bone, cartilage and soft tissue changes with the use of improved roentgen diagnostic techniques. Vascular changes in joints, particularly the hips, have been implicated as a cause of arthritis, and with modern, scientific equipment including micro-radiograph, x-ray diffraction equipment and fractional focus x-ray tubes, it is believed that much more information can be obtained relative to the blood supply of various joints. Portions of this work will be done at Wayne University, Detroit Receiving Hospital, Detroit Memorial Hospital, and Veterans' Hospital. Dr. Lofstrom will be assisted in his work by Dr. P. P. Werle and Dr. H. Linn.

Dr. Gordon B. Myers, professor of medicine at Wayne University and head of the Department of Medicine at Receiving Hospital, will continue a study of Cortone administration on an out-patient basis in the Arthritis Clinic and will have the use of Compound F available for intra-articular use in selected cases.

Dr. Hugo A. Freund, president of the Child Research Center of Michigan, will continue investigations in the etiology of rheumatoid arthritis, particularly the infection theory involving virus-host cell inter-relationships in tissue cultures. This will take into consideration the role of mucoproteins

and virus inhibitors, and also a study of possible enzymic effects of viruses on mucoproteins.

Dr. Dwight C. Ensign and Dr. John Siegler, of Henry Ford Hospital, will be investigating the changes in the electrophoretic patterns in rheumatoid arthritics and study the rates of protein synthesis. A glycine product labeled with a stable isotope N^{15} will be utilized to calculate rates of protein synthesis and the size of the nitrogen pool in laboratory animals and human beings.

Dr. Alvin E. Price and the Arthritis Research Committee of Harper Hospital will investigate thyroid function in chronic rheumatoid arthritis, using radioactive tracer studies, protein bound iodine, basal metabolism and blood cholesterol to determine and evaluate changes in thyroid activity. This group will also continue their interest in intra-articular Compound F in a certain number of selected cases. This project will also investigate serum proteins by electrophoresis with a determination of gamma globulin by an immunologic method.

There are several other projects which the Medical Advisory Committee and the Board of Directors have considered for assistance, but up to the present time they have not been approved because of a need for more clarification regarding the methods of investigation.

During the past year, the Arthritis Foundation has become interested in the problem of home care for the arthritic, and has developed a program of practical care in which general nursing and physical therapy is brought directly to the arthritic at home. The various Visiting Nurse Associations throughout the state have co-operated completely with this effort to stimulate interest in the invalid and semi-invalid who are incapacitated to such an extent that they are unable to attend clinics, hospitals or doctors' offices for regular treatment.

Many people who have arthritis have in addition some other chronic diseases such as diabetes, nephritis, heart disease or cerebral-vascular residual difficulties so that the home care of the arthritic involves a somewhat complicated co-operative program between the physician in charge of the case, and the visiting nurse.

This program was started in Metropolitan Detroit in October of 1951 with the very fine co-operation and interest of Miss Emilie G. Sargent, head of the Visiting Nurse Association, and Miss Helen M. Lehman, chief physical therapist of the VNA in Detroit. After a pilot study of several months' activities in the Detroit area, the program of home

ARTHRITIS RESEARCH IN MICHIGAN—LIGHTBODY

service was expanded to include a large part of the state in those cities which had active Visiting Nurse Associations so that by January 1, 1952, the foundation had completed arrangements with the VNA

including injections, which are outlined by the physician in charge of the case.

Eighty-five per cent of the house calls on arthritics are made on patients between the ages of thirty-



Photograph of the scientific exhibit of the Michigan Chapter of the Arthritis and Rheumatism Foundation, which was presented at the convention of the Michigan State Medical Society held in Grand Rapids, Michigan, September 25-29, 1951. The exhibit detailed the typical radiographic patterns of the various types of arthritis along with actual photographs of patients having a variety of types of disabilities due to arthritis and allied diseases.

A thirty-minute sound movie on the diagnosis and treatment of rheumatoid arthritis, including indications and contra-indications of the use of the new hormones—ACTH and Cortisone—was shown at intervals throughout the Convention, and this film is available to any member of the Michigan State Medical Society for hospital or society meetings.

groups in the following cities: Ann Arbor, Bay City, Flint, Grand Rapids, Kalamazoo, Lansing, Marquette, Muskegon, Pontiac, and Saginaw, to assist in the home care of the arthritic and to offer this service to all home arthritics.

Up to August 1, 1952, there have been over 6,500 house calls by visiting nurses in the care of these arthritics at home. Standard forms for the reporting of these cases have been developed, which include the name, address and age of the patient along with the actual diagnosis. Since the inception of this program, there has been a great increase of the number of arthritics being treated at home, and we have found that there is a tremendous need for physical therapists, as it is impossible for the average visiting nurse to give complete physical therapy treatments. The visiting nurse does, however, follow the program of treatment,

six to seventy and only 15 per cent below the age of thirty-five. Of the various types of arthritis which is being treated at home, it was found approximately 55 per cent have rheumatoid arthritis, 12 per cent have osteoarthritis, and 18 per cent combined rheumatoid and osteoarthritis. There is a group of unclassified types of arthritis including gout which includes about 15 per cent of the total.

In October, 1951, Mr. Henry T. Ewald, chairman of the board of the foundation, donated an automobile to the Visiting Nurse Association of Detroit to be used in the transportation of portable equipment and the foundation completed the gift by donating a certain number of portable infrared lamps. A portable diathermy unit was presented to the Curative Workshop for treatment of arthritis.

The Medical Advisory Committee of the founda-

tion has suggested that a survey of the home care services is in order to determine which patients have sufficient amount of salvage material present to warrant their transportation to a rehabilitation center such as the Curative Workshop in Detroit. Because of the great interest in rehabilitation programs throughout the country, it was thought that certain cases could be brought back to a status of health by concentrated efforts in occupational therapy, orthopedic surgery, and physical therapy.

The Medical Advisory Committee of the foundation is composed of a group of physicians located throughout the state, and has regular meetings during the year. The foundation wishes to express thanks to these men for their time and effort in supporting and assisting in the program of the foundation.

The physicians of the state are very fortunate indeed to have laymen of the caliber of Mr. Henry T. Ewald, president of Campbell-Ewald Company, and Mr. H. J. McLaurin, general agent of the Aetna Life Insurance Company, as the guiding factors in the administration of this foundation. The Board of Directors of the foundation have devoted much of their valuable time in determining the policies of allocation of funds for research and home care, and are making every effort to stimulate more and greater interest in the subject of arthritis and to bring more direct services to a greater number of people.

The Michigan Chapter of the Arthritis and Rheumatism Foundation is supported entirely by the United Foundation of Michigan, which is the Torch Fund in Detroit.

7338 Woodward Avenue

MICHIGAN CHAPTER
ARTHRITIS AND RHEUMATISM
FOUNDATION

7338 Woodward Ave.

Detroit 2, Michigan

Officers: H. T. Ewald, Chairman; H. J. McLaurin, Vice Chairman; W. A. Moffett, Treasurer; Lewis S. Robinson, Secretary.

Medical Director: James J. Lightbody, M.D.

Business Manager: John W. Stannard

Executive Committee: H. T. Ewald, Chairman; H. J. McLaurin; D. E. Mitchelson; W. A. Moffett; Lewis S. Robinson; Dr. J. J. Lightbody.

Board of Directors: Oscar L. Buhr; Sterling Eaton; Dr. Hugo A. Freund; Lee E. Joslyn, Jr.; D. E. Mitchelson; Dr. Earl A. Peterman; Dr. William D. Robinson; Dr. E. C. Vonder Heide; and Chapter Officers.

Medical Advisory Committee: Dr. James J. Lightbody, Chairman; Dr. Noyes L. Avery, Jr.; Dr. Theodore I. Bauer; Dr. Bert M. Bullington; Dr. Moses Cooperstock; Dr. Cecil Corley; Dr. Donald C. Burman; Dr. Hugo A. Freund; Dr. O. H. Gaebler; Dr. I. Macy Hoobler; Dr. Howard Lewis; Dr. John Littig; Dr. A. F. Litzenburger; Dr. Kenneth McLeod; Dr. Charles W. Peabody; Dr. William D. Robinson; Dr. E. C. Vonder Heide.

National Foundation Officers (New York, N. Y.): Floyd B. Odum, Chairman; Gen. Lucius D. Clay, Vice Chairman; Gen. George C. Kenney, President; Cyril H. Jones, Vice President; James G. Blaine, Treasurer; Hayden N. Smith, Secretary; Sidney J. Weinberg, Executive Committee Chairman; Dr. Gideon K. de Forest, Medical Director; Thomas E. Freeman, Executive Director.

ACCIDENTS COST U. S. \$21 MILLION A DAY

If you spent \$1,000,000 a day, it would take you almost 22 years to spend as much as accidents cost the United States in one year.

The National Safety Council says accidents cost the nation \$7,900,000,000 last year—or about \$21,560,000 a day!

According to "Accident Facts," the council's statistical year book, just off the press, this includes:

\$2,900,000,000 in wages lost by disabled persons, lower wages due to permanent partial disability, and the

present value of anticipated future earnings of those killed or permanently incapacitated.

\$1,400,000,000 property damage in motor-vehicle accidents.

\$1,300,000,000 in property destroyed or production lost in occupational accidents.

\$1,000,000,000 for administrative and claim settlement costs of insurance. This does not include claims paid.

\$731,000,000 in property destroyed by fire.

\$550,000,000 for medical fees and hospital expense.—*Journal of Commerce*, July 30, 1952.

The Use of Massive-dose Cortisone in the Treatment of Rheumatoid Arthritis

By John D. Chase, M.D., and
James J. Lightbody, M.D.
Detroit, Michigan

SINCE 1948 the rapid relief of symptoms for the patient with rheumatoid arthritis has been made possible by the use of ACTH and cortisone.⁵ However, in the majority of cases this improvement persists only during administration of the hormones or shortly after their discontinuation. Consequently a search has been made for new methods of administration or for a combination of the hormones with other drugs either to potentiate their action or produce a more lasting effect.^{3,4,6,12} Bayles¹ outlined a regimen employing doses of cortisone larger than those routinely used, without the appearance of persistent toxic side effects, and obtained remissions which lasted beyond those which might be expected from the usual course of treatment. Because of this promising report a similar program was instituted in an attempt to reproduce the results.

Methods

Seven patients (Table I) were selected for this investigation from the medical service of a large city hospital. The ages of the three women and four men ranged from thirty-seven to fifty-four years. Each patient was well documented as a case of progressive rheumatoid arthritis; the shortest duration of symptoms was five years and the longest fifteen years. No patient was studied who was not largely or totally incapacitated by the illness. In every instance the patient had received other forms of treatment, none of which had resulted in a lasting remission.

Before treatment was started, arthritic evaluation of each case was carefully made by classification of progression of the disease and function according to the criteria of the American Rheumatism Association proposed by Steinbrocker.¹¹ Each involved joint was closely checked for signs of

acuity, and range of motion. Signs of extra-articular disease associated with the rheumatoid arthritis were recorded. Before, during, and after treatment, every patient was followed daily by the same individual and a record was kept of each visit, evaluating the subjective response as well as objective changes. Alteration in the arthritic status was classified according to Steinbrocker's Therapeutic Response index,¹¹ which was also used to follow the patient after discontinuation of the cortisone.

In addition to functional and subjective arthritic status, cardiopulmonary function was carefully evaluated. The patients were weighed daily. Baseline laboratory examinations included daily urinalysis and eosinophil counts. Twice weekly the blood cell counts, erythrocyte sedimentation rate, fasting blood sugar, plasma sodium, potassium, CO₂ combining power, serum chloride, and electrocardiogram were done. These examinations were carried out through the entire period of hospitalization. X-rays were taken to confirm and substantiate the clinical diagnosis.

Six of the seven patients had a pretreatment biopsy specimen taken from the knee joint by open exploration, and of these, four had similar biopsies taken at the termination of treatment. Testicular biopsy specimens were examined from the four male patients before and after treatment, and when possible a seminal fluid specimen was examined. Urine was collected from all patients before cortisone therapy for determination of gonadotrophins and 17-ketosteroids, and from five post-treatment samples were obtained.

Cortisone was administered in divided doses by parenteral route, reaching a daily dose of 500 mg. or more in every case. This therapy was continued until the appearance of toxic symptoms, at which time the cortisone was stopped abruptly in six cases. In the seventh, such a large amount of the steroid had been given that it was feared adrenal cortical insufficiency would develop, and a weaning process of decreasing doses was followed.

During the period of cortisone administration all patients were placed on a sodium restricted diet, with potassium supplements. This was altered following treatment to either a routine hospital diet, or a special diet designed to combat a specific type of cortisone side-effect.

After discontinuation of cortisone, the patients remained in the hospital until all evidence of cortisone toxicity had subsided; they were then dis-

From Receiving Hospital, and Department of Medicine, Wayne University College of Medicine.

This project supported by Michigan Chapter, Arthritis and Rheumatism Foundation.

MASSIVE-DOSE CORTISONE—CHASE ET AL

TABLE I.

Patient	Age	Sex	Pro- gression	Function Before Treatment	Days Treatment	Total Dose	Treatment Response	Days Remission	Treatment Response Maintained	Function Maintained	Toxicity
F.N.	51	F	III	IV	18	8.75 gm.	II	230	III	II	Hypertension Dyspnea Facial fullness Euphoria Psychosis Glycosuria Facial fullness Hypergly- cemia
A.B.	42	M	III	IV	28	14.575 gm.	I	37	IV	IV	Depression Infection
M.O.	54	F	IV	IV	22	10.375 gm.	II	13	IV	IV	Facial fullness
A.S.	50	M	IV	IV	89	26.625 gm.	II	0	IV	IV	Tachycardia Peptic ulcer Edema
E.B.	40	F	III	III	52	6.125 gm.	II	14	IV	III	
G.H.	48	M	III	IV	48	12.4 gm.	I	78	IV	IV	
J.M.	37	M	III	IV	23	10.8 gm.	I	22	IV	IV	

charged and followed by weekly visits to the Out-patient Department of the same hospital.

Case Summaries

Case 1.—G. H., a white man, forty-eight years old, was admitted to the hospital from the Outpatient Department with a history of rheumatoid arthritis for seven years, and classified as progression of arthritis, grade III, function, grade III. The arthritis, which had begun with symptoms in the left ankle, had progressed to involve bilaterally symmetrical joints of all extremities and the cervical spine. Previous treatment included three courses of gold; the first two courses, given soon after the development of the arthritis, had produced some symptomatic relief. Two years before this admission two operative procedures on his knees and ankles had been made to increase their mobility. The patient had received no previous cortisone.

Physical examination revealed a moderately developed but poorly nourished male, who was able to care only for his simplest requirements while at bedrest. All joints were tender, both ankles and knees were edematous with intra-articular effusion, increased temperature, and erythema. Limitation of motion varied from 40 per cent rotatory loss in the left ankle to 15 per cent flexion loss in the right hand. The point of maximum cardiac impulse was 9 cm. from the mid-sternal line in the fourth interspace, and no murmurs were heard. The rate and rhythm were normal. The blood pressure was 120/75, and the fundi showed no evidence of vascular disease. There was no elevation of venous pressure.

After completion of the control study the patient was started on cortisone with a daily dose of 100 mg. This was increased to 300 mg. per day on the seventh day of treatment and continued at this level for the next sixteen days, when the dose was increased to 500 mg. per day and maintained for fourteen days. On the thirty-second day of treatment the patient experienced an attack of tachycardia with a rate of 160 beats per minute. It was auricular in type, as confirmed by electrocardiography, and without therapy fell to 68 beats per minute within three hours. During the next three days a similar episode occurred twice, each time following a cortisone injection. At no time was dyspnea, cough, hemoptysis, chest pain or cardiac failure noted. The cortisone was discontinued

after a total dose of 12.4 gm. in thirty-six days and the tachycardia did not reappear. The arthritis had improved, the patient was ambulatory and free of pain, and was now classified as progression of arthritis, grade III, function, grade I, therapeutic response, grade I.

The patient was discharged to the Outpatient Department, and remained in remission until seventy-six days after discontinuation of cortisone, when a relapse occurred with 90 per cent loss of the cortisone-induced improvement. He was readmitted to the hospital and reclassified as progression of arthritis, grade IV, function, grade III, therapeutic response, grade IV.

Case 2.—F. N., a white woman, fifty-six years old, admitted to the hospital with a history of rheumatoid arthritis for fourteen years, was classified as progression of arthritis, grade III, function, grade IV. For five weeks preceding admission increasingly severe pain and joint swelling had confined the patient to her chair. Acute involvement with this exacerbation was most marked in the ankles and right wrist. Previous treatment had been symptomatic with spontaneous remissions until September, 1950, when she received cortisone for the first time with good results. A second course was administered in January, 1951, again with remission, and then relapse within one month after discontinuation of the hormone. Past history disclosed that the patient had been a mild hypertensive but had never been decompensated or received specific cardiac medication.

Physical examination revealed a chronically ill woman with typical deformity of the hands, wrists, elbows, knees, and ankles. There was definite erythema and edema of the ankles and right wrist. Both knees and the left elbow contained minimal effusions without heat or redness. Limitation of motion ranged from no loss in the spine to 90 per cent flexion loss of the right wrist. There was marked disuse atrophy of the interossei. Subcutaneous nodules were palpated over the dorsal surface of the left wrist and both olecranon processes. The fundi showed an A/V ratio of 1:3 with early nicking. No hemorrhages or exudates were seen. The left border of cardiac dullness was ½ cm. outside the mid-clavicular line in the fourth interspace. A soft apical systolic murmur was heard at the apex, and did not radiate. The blood pressure was 134/82. The lungs were normal to auscultation and percussion. The liver was palpated at the right costal

MASSIVE-DOSE CORTISONE—CHASE ET AL

margin as smooth and nontender. The spleen could not be felt. Laboratory investigation showed 10.5 gm. of hemoglobin with 3.88 million red cells, a white blood cell count of 13,700 with 63 per cent neutrophils. The

where she maintained the cortisone-induced remission for 148 days, when following an upper respiratory infection, swelling of the right index metacarpal-phalangeal joint appeared. The therapeutic response was accordingly

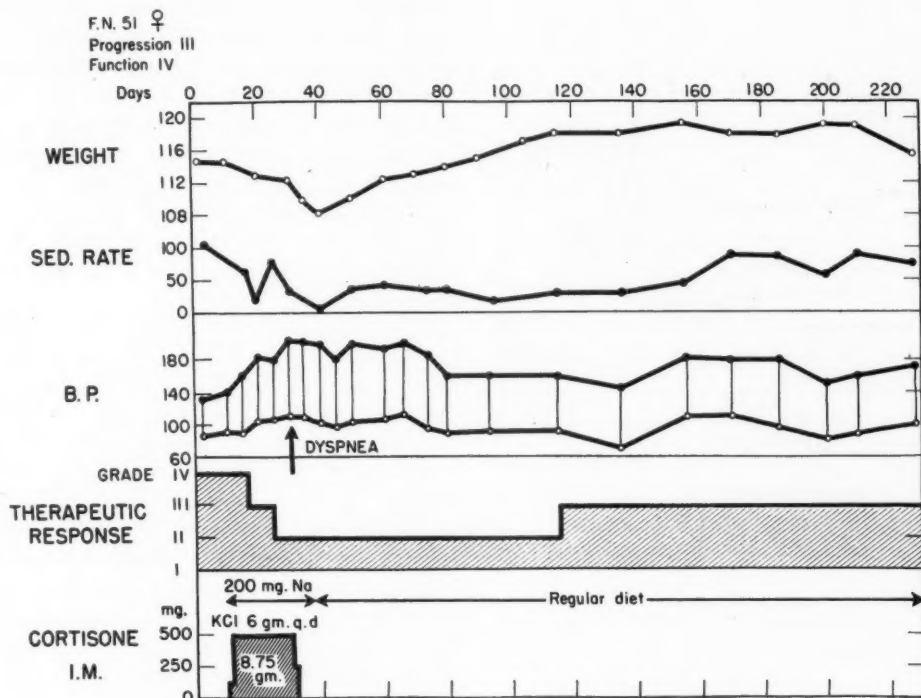


Fig. 1. Patient F. N. Showing particularly the decrease in weight and sedimentation rate with a coincident rise in blood pressure with cortisone therapy.

sedimentation rate was 102 mm./hr. The urine was normal.

After suitable control studies, the patient received 125 mg. of cortisone on the fifteenth hospital day. This dose was increased to 500 mg. on the sixteenth day and continued at this level until the thirty-first day. On the thirty-second day the dose was reduced to 250 mg. and then discontinued.

With the institution of hormonal therapy, the patient had been placed on a 200 mg. sodium diet supplemented by 6 gm. of potassium chloride which was continued throughout the treatment period. On this regimen the body weight decreased steadily (Fig. 1) with normal plasma electrolytes. In the same interval the blood pressure had progressively increased, the systolic more than the diastolic, reaching a maximum of 210/106. On the thirty-first hospital day, after seventeen days of cortisone treatment, marked dyspnea with bronchospasm occurred. The heart had not increased in size, and no tachycardia was present. The cervical veins were visible at the clavicular level in the sitting position. There was minimal pitting edema of the ankles. The dyspnea responded favorably to aminophylline and, after discontinuation of the cortisone, did not recur. At this time the patient was ambulatory and the arthritic status classified as progression of arthritis, grade III, function, grade II, and therapeutic response, grade II.

She was discharged to the Outpatient Department,

changed to grade III, and has persisted at this level for 230 days.

Case 3.—A. S., a white man, fifty years old, was admitted to the hospital, with a history of rheumatoid arthritis for twelve years, completely bedridden, helpless to feed or care for himself. There were flexion contractures of both knees and both elbows, and swelling, pain and erythema were present in both wrists and hands. The arthritis was classified as progression of arthritis, grade IV, function, grade IV: Previous therapy included blood transfusion, salicylates, and both intramuscular and oral cortisone. The intramuscular cortisone, given ten months before admission to this hospital, had produced temporary relief of symptoms and increased mobility which was not sustained by the oral maintenance route.

Physical examination revealed the patient to be chronically ill with marked pain. Loss of motion ranged from 100 per cent in the knees to 15 per cent in the left hip. The spine was not involved. The spleen was palpable one finger-breadth below the left costal margin.

After pretreatment studies, including hormonal assays and biopsies, intramuscular cortisone was started on the seventh hospital day, with an initial dose of 250 mg. On the next day this was increased to 500 mg. and continued at this level for thirty-four days. By this time the patient was able to perform simple duties, and was semi-ambulatory with crutches. Because of the large total

dose of cortisone received it was felt advisable to discontinue the hormone by gradually decreasing the doses from 250 mg. to 125 mg. to 75 mg. over nineteen days. Since 75 mg. of cortisone failed to maintain a remission, the

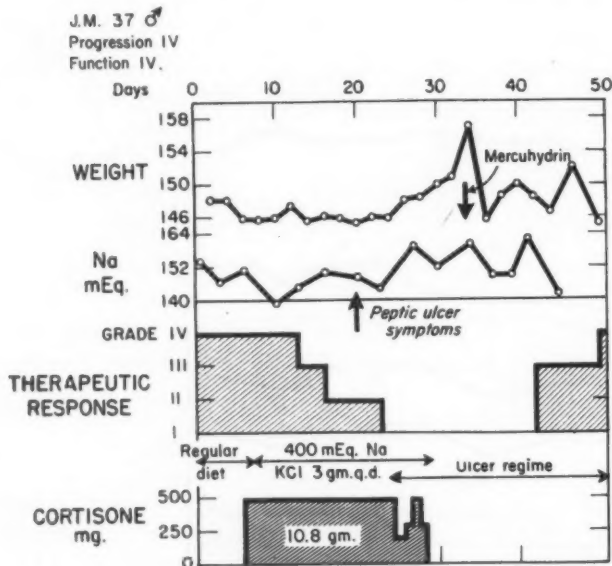


Fig. 2. Patient J. M. Showing clinical course, with the development of ulcer symptoms occurring during second week of cortisone therapy.

schedule was increased again from 75 mg. to 150 mg. to 300 mg. At this higher dose the patient again regained his former mobility, but with a drop in dosage from 300 mg. to 100 mg. effusion of the right knee appeared. It was not considered advisable to maintain this patient over a prolonged period at doses of cortisone above 100 mg. per day; consequently, the dose was reduced to 25 mg. for four days and then discontinued. After 26.625 gm. of cortisone in eighty-nine days, the patient was reclassified as progression of arthritis, grade IV, function, grade IV, and therapeutic response, grade IV.

The side-effects of cortisone observed during the course of treatment were elevation of the blood sugar to 160 mg. from a previously normal level, and moderate facial fullness.

The patient was discharged with symptomatic treatment for relief of pain, and resumed his previous routine of bed and chair nursing care with home physiotherapy. Two months afterwards, while his wife was helping him from bed to chair, he complained of a severe pain in the chest and collapsed. Upon entrance to the hospital, he was found in marked shock with severe dyspnea and profuse perspiration. He expired within an hour, and permission for post-mortem examination was refused.

Case 4.—J. M., a colored man, thirty-seven years old, admitted to the hospital with a history of rheumatoid arthritis for five years, was classified as progression of arthritis, grade III, function, grade IV. He had done heavy labor as a foundry worker until pain and swelling of the hands, wrists, elbows and shoulders forced his retirement. The progressive character of his arthritis was extremely rapid in the upper extremities but did not involve the knees or ankles until two years before this

admission. Associated with the joint disease was a striking amount of disuse muscle atrophy. However, motor function of muscle groups was maintained to the limit of architectural changes in the joints. Previous treatment had been entirely symptomatic until one year prior to admission, when on two occasions he had received cortisone. Each time there had been marked improvement in his arthritic status, but the rapid development of edema forced discontinuation of therapy, and when the symptoms of arthritis reappeared it was with increased severity.

Past history revealed that several years before the patient had, during several months, experienced a dull epigastric discomfort one half hour after meals, but the pain did not awaken him from sleep. These symptoms had not recurred at the time of the two previous courses of cortisone.

Physical examination showed a man who appeared to be chronically ill and who moved about in bed with obvious discomfort. There was swelling, increased heat and pain in both ankles, knees, and the right elbow which contained a moderate intra-articular effusion. No subcutaneous nodules were palpable. The hands showed no evidence of acuity, but there was typical fusiform swelling at the proximal interphalangeal joints with hyperextension of the fingers. Mild ulnar deviation was present. Muscle wasting was present in varying degrees dependent upon the extent of joint involvement. Limitation of motion ranged from 50 per cent loss in both shoulders to 15 per cent loss of extension of the left elbow. The spleen was not palpable, and there was only a shotty generalized lymphadenopathy. The heart and lungs were normal. Complete neurological examination was normal.

After completion of the control studies, the patient received 500 mg. of cortisone on the sixth hospital day, which was continued until the twenty-fourth day, when the dose was dropped to 200 mg. On succeeding days the dose of cortisone was 300 mg., 500 mg., and 300 mg. The discontinuation of cortisone was prompted by the reappearance of epigastric pain on the twentieth day with x-ray evidence of a duodenal ulcer of superficial type. On the seventeenth day, during the cortisone regime, gastric analysis showed 16 degrees of free HCl in the fasting sample. Accordingly, the diet was changed from 400 mg. sodium to an ulcer regimen containing an equal amount of sodium, utilizing Lonolac as a milk substitute. When the cortisone was discontinued, a routine Sippy diet was given. Although rapid control of the ulcer symptoms was achieved and x-ray showed evidence of healing, with the increased dietary sodium, marked weight gain with dependent edema occurred. This was controlled by mercurhydrin which produced an adequate diuresis (Fig. 2).

The symptoms of arthritis had subsided rapidly under the massive cortisone therapy and at the completion of treatment the patient was reclassified as progression of arthritis, grade III, function, grade I, and therapeutic response, grade I. This remission was maintained for fourteen days, at which time the patient returned to the clinic with pain and increased heat in the right elbow. On the twenty-second day after the last dose of cortisone the patient was readmitted because of complete relapse of the cortisone-induced remission.

Case 5.—E. B., a white woman, forty-eight years old, was admitted to the hospital with rheumatoid arthritis of fifteen years' duration, and classified as progression of arthritis, grade III, function, grade III, Felty's syndrome. Previous therapy had consisted of five courses of gold salts, blood transfusions, "expensive white tablets" of unknown type, liver extract, and salicylates. None had produced a lasting remission, and the disease process continued to progress with articular and extra-articular manifestations.

Physical examination revealed limitation of motion ranging from 60 per cent loss of flexion in the left hand to 30 per cent loss in both ankles. All large and medium-sized joints were involved except the spine. Extra-articular evidence of the disease included anemia, splenomegaly, and rheumatoid nodules. Laboratory investigation confirmed the anemia by a hemoglobin of 9.5 gm. and a red blood cell count of 3.88 million. A leukopenia of 3,550 white blood cells was present, of which 43 per cent were lymphocytes. The sedimentation rate was 69 mm./hr. Psychometric studies failed to show any suggestion of psychosis, but it was the opinion of the psychiatrist that the patient was emotionally immature.

On the nineteenth day after admission, the patient received 250 mg. of cortisone, and from the twentieth day to the twenty-third day, 500 mg. per day. At this time the arthritis definitely improved, but marked depression appeared. For this reason, the dose of cortisone was reduced from 500 mg. to 125 mg. on the twenty-fourth day, and to 100 mg. from the twenty-fifth to thirty-third day. On the thirty-fourth day an oral dose of 75 mg. of cortisone was begun, and the patient was discharged from the hospital with complete relief from depression and improvement of the arthritis, classified as function, grade II, therapeutic response, grade II. On the forty-second day after admission the dose of cortisone was further reduced to 50 mg., where it was maintained until the forty-eighth day, when it was again increased to 75 mg. because of failure to sustain improvement. This dose was continued until the sixty-ninth day when a severe cellulitis of the left foot developed which necessitated hospitalization and discontinuation of the cortisone. While in the hospital, the patient maintained her arthritic remission for a period of fourteen days, after which there was a complete return of symptoms.

During therapy the spleen size decreased only slightly; however, by the fifteenth day of treatment, the white blood cell count had risen to 6,450 with 53 per cent neutrophils. This hematologic improvement in the hypersplenic phenomena of Felty's syndrome persisted following the arthritic relapse.

Case 6.—M. O., a white woman, fifty-four years old, was admitted to the hospital with chronic rheumatoid arthritis, classified as progression of arthritis, grade IV, function, grade IV.* She had been well until twelve years before admission when pain and swelling appeared in the fingers and wrists. With periods of spontaneous remissions and relapses the arthritic involvement progressed until the ankles, knees, lumbar spine, shoulders, elbows, and temporomandibular joints were affected. For the past four weeks she had been completely bedridden with

severe pain and immobility. Previous treatment included spa rest in Arizona, foreign protein, vitamins B and D, physiotherapy, and gold salts. Six months before admission she had received one routine course of parenteral

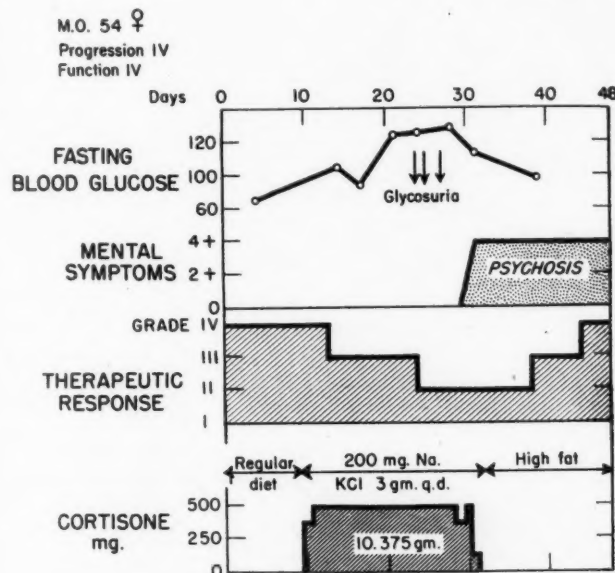


Fig. 3. Patient M. O. Showing glycosuria during third week of therapy followed shortly by development of psychosis.

cortisone, which resulted in marked relief of symptoms during therapy. The remission, however, was not sustained, and the ensuing relapse was of increased severity.

Physical examination revealed an acute and chronically ill woman, unable to assume a sitting position or to care for her needs. In spite of her clinical status, she was cheerful and faced her problems with insight. The hands showed the most marked evidence of chronic disease with severe ulnar deviation of the fingers, flexion of the palm, and hyperextension at the interphalangeal joints. Both knees and ankles were swollen with increased heat and effusion. The right knee was limited to 60 per cent extension and both knees to 50 per cent flexion. Neither hand could be elevated to head level. The left ankle was ankylosed. The lymph nodes and spleen were not enlarged. The cardio-pulmonary system was entirely normal. Laboratory examination showed only a moderate anemia of 10.5 gm. of hemoglobin with 8.82 million red blood cells and a white blood cell count of 14,800 of which 75 per cent were neutrophils. The sedimentation rate was 102 mm./hr. The remainder of the laboratory investigation, including the fasting blood sugar, was normal.

After completion of the control studies, the patient received 375 mg. of cortisone on the tenth hospital day. This was increased to 500 mg. on the eleventh day, and continued at this level until the twenty-eighth day, when the dose was decreased to 375 mg. During the next two days she received 500 mg. and 125 mg. of cortisone, and the hormone was discontinued on the thirty-first day. On the thirtieth day, while the author was visiting the patient, she became hysterical during the examination. This episode lasted approximately five minutes, after

which she resumed a normal behavior. However, on the following day, she had definite flights of ideas and hallucinations. Because of these symptoms, she was transferred to the psychiatric ward. At this time, after 10.375

before this admission pain in the lumbar spine was noted for the first time. Subcutaneous nodules had been present for four years. Previous treatment consisted of two visits to spas in Arizona, gold salts, and salicylates, none

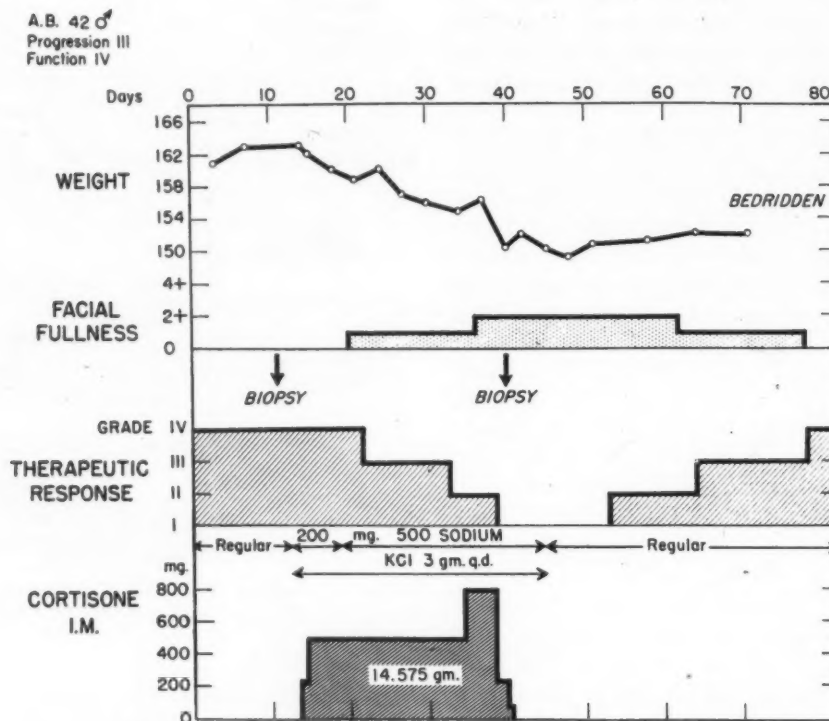


Fig. 4. Patient A. B. Showing excellent therapeutic response with development of facial fullness during cortisone treatment but followed by relapse.

gm. of cortisone in twenty-two days, she was ambulatory and caring for herself. The arthritis was now classified as progression of arthritis, grade IV, function, grade II, and therapeutic response, grade II. However, the remission persisted only thirteen days, when objective evidence of increased heat and swelling reappeared in the right knee. Subjective response could not be evaluated during this period of psychosis. Accordingly, she was reclassified as therapeutic response, grade IV.

During the course of therapy, the fasting blood sugar reached 128 mg. per cent with glycosuria on three occasions (Fig. 3).

Three months after termination of cortisone, the patient had returned to her pretreatment emotional status and was transferred to a convalescent home from which she makes weekly visits to the Outpatient Clinic.

Case 7.—A. B., a white man, forty-two years old, was admitted to the hospital with a history of rheumatoid arthritis classified as progression of arthritis, grade III, function, grade IV. Until six years previously, he had been well, when the appearance of pain and stiffness in the fingers which gradually spread by exacerbation and remission to involve the wrists and elbows, had forced his retirement as a coal miner. During the following two years, the shoulders, sternoclavicular joints, hips, knees, and ankles were affected by the same process. A year

of which had produced any lasting benefit. Five months prior to admission he had received a course of oral cortisone which resulted in relief of his symptoms, but, unfortunately, relapse occurred one week after cessation of the drug with marked exacerbation and signs of acuity. Past history disclosed the fact that the patient had suffered from seasonal asthma for many years.

Physical examination revealed a chronically ill man with typical bilaterally symmetrical joint involvement. Limitation of motion varied from 85 per cent flexion loss of the right wrist to 10 per cent rotation loss of the ankle. Both knee and ankles were swollen with increased heat and erythema. Effusion was present in both knee joints. The left elbow was slightly swollen with increased heat. There were rheumatoid nodules over both olecranon processes. The heart and lungs were normal. The liver, spleen, and lymph nodes were not palpably enlarged.

After completion of the control study, the patient was given 250 mg. of cortisone on the fourteenth hospital day. On the following day the dose was increased to 500 mg. per day and maintained at this level until the thirty-fifth day. When no signs of toxicity occurred, the dose was increased to 800 mg. per day. On the fortieth day, the patient complained of difficulty in breathing, and examination of the lungs revealed signs of diffuse bronchospasm. Accordingly, the dose of cortisone was decreased

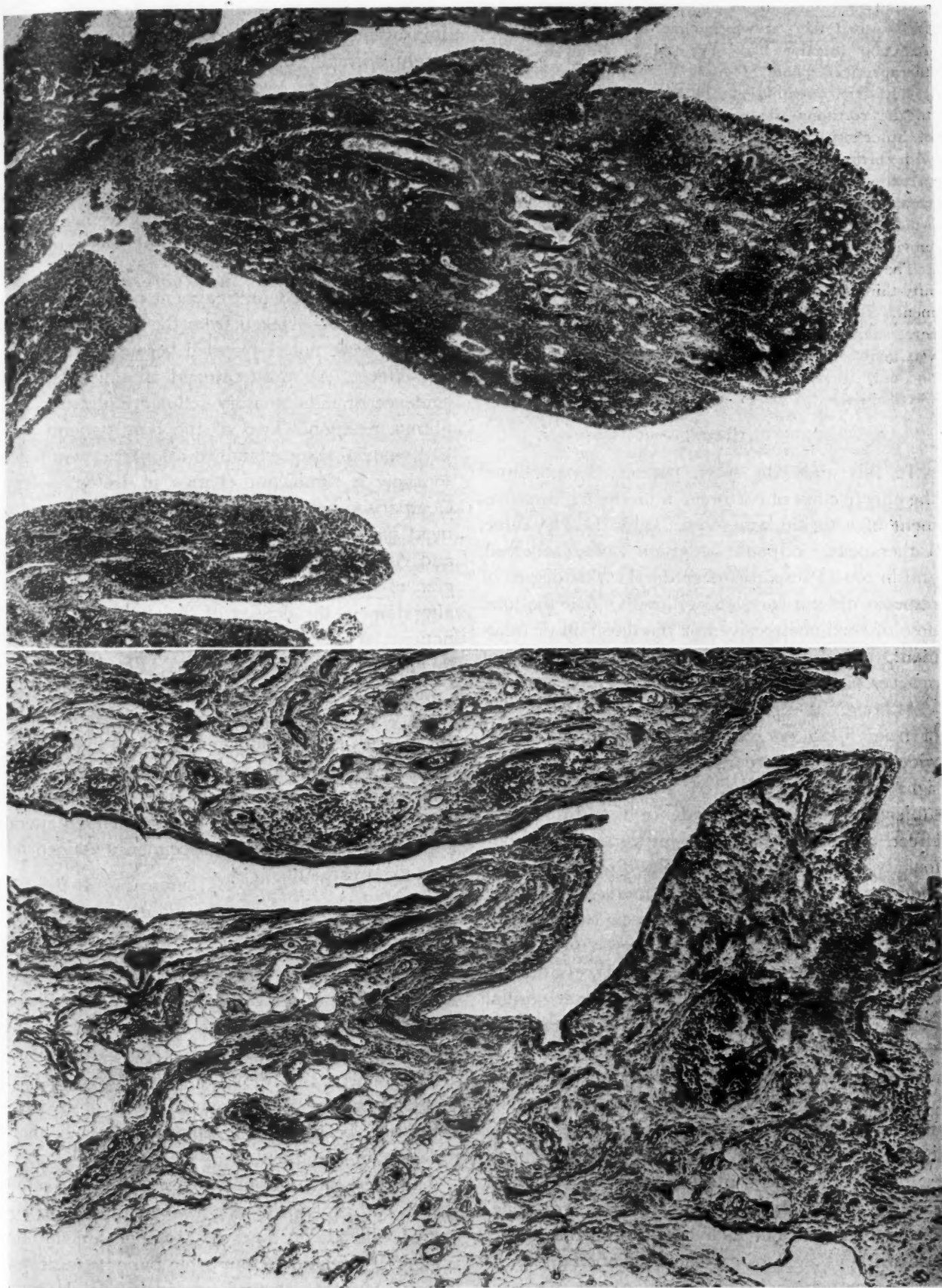


Fig 5. $\times 21$. (a) (*above*) Synovial tissue from right knee of patient A. B. before treatment. (b) (*below*) Synovial tissue from right knee of patient A.B. after 14.575 gm. of cortisone in twenty-eight days. Note the marked reduction in numbers of inflammatory cells.

to 250 mg., then to 75 mg., and discontinued on the forty-second day, at which time the lungs were clear. Articular function had improved to grade I, with a therapeutic response of grade I.

Euphoria, insomnia, and facial fullness were attributed to the cortisone treatment (Fig. 4). The appearance of bronchospasm which caused termination of therapy with cortisone was not associated with changes in venous pressure, cardiac rate, or clinical edema. Rapid and complete control of the bronchospasm with aminophylline would suggest that it was associated with the patient's previous history of asthma.

The patient was discharged from the hospital on the fifty-third day to be followed in the Outpatient Department. Readmission to the hospital was required thirty-seven days after the last dose of cortisone because he was unable to care for himself in an ambulatory status and only 10 per cent of the cortisone-induced remission was maintained.

Results

In this study the seven patients demonstrated the effectiveness of cortisone in producing improvement of arthritic symptoms (Table I). In three, a therapeutic response of grade I was achieved, and in four a response of grade II. The degree of response did not correlate well with either the total dose of cortisone received or the duration of treatment, but did correlate with the pretreatment severity of the disease.

Although the range of total cortisone dosage of from 6.125 gm. to 26.625 gm. emphasized a wide variation in tolerance to the steroid before signs of toxicity appeared, eventually all seven subjects developed some evidence of cortisone side-effect. In no instance did the signs of cortisone toxicity persist beyond three months. Frank psychosis occurred in one instance, marked depression in another; hyperglycemia was seen twice, and a significant degree of facial fullness three times. Severe cutaneous infection required cessation of treatment in one case. Hypertension with normal serum electrolytes and a falling body weight occurred in one woman who had a normal blood pressure upon admission; but changes in the retinal fundi suggested previous vascular disease. One patient developed dependent edema when the sodium restricted diet was changed to a Sippy regimen in order to control duodenal ulcer which had developed under treatment with cortisone. Paroxysmal auricular tachycardia occurred in one case, without signs of cardiac decompensation.

The cortisone-induced remission was partially maintained in one patient for 230 days, and in another for seventy-eight days. The other five

patients failed to retain a significant degree of improvement for a period beyond that which might normally be expected in the course of the disease. Of the two patients who continued in remission on a moderate amount of cortisone, one received 8.75 gm. in eighteen days, and the other 12.4 gm. in forty-eight days. However, one patient receiving 26.625 gm. in eighty-nine days was unable to maintain his improvement when the dose of cortisone was reduced below 100 mg. per day.

Six patients had pretreatment biopsy specimens of synovial tissue taken from the knee joint. Two patients were not re-biopsied because of cortisone side-effects. All pre-treatment specimens showed evidence of inflammatory cellular infiltration and fibrous reaction. Two of the four patients who had synovial tissue examined after treatment failed to show a significant change in histopathology. Comparison between pre-treatment and post-treatment specimens from the other two patients, A. S. and A. B., demonstrated a reduction in the degree of inflammatory reaction, but no significant alteration in the density of fibrous tissue. In one patient (A. B.) the decrease in cells was followed by changes suggestive of edema (Fig. 5).

Assay of urine collected before and after treatment demonstrated a rise in the excretion of 17-ketosteroids and gonadotrophins in all five patients where it was possible to collect the samples. Testicular biopsy specimens from the four male patients during therapy failed to show marked alterations when compared with specimens obtained before the treatment.

Discussion

The temporary reversal by cortisone of progressive symptoms of the collagen diseases is paralleled by inconstant changes in the histopathology of the disease as demonstrated by this report and others.⁷ On the other hand, the failure to observe changes in biopsy specimens of synovial tissue of two patients may be correlated with the relatively short duration of treatment.

The increase in urinary excretion of 17-ketosteroids and gonadotrophins has been previously reported when large doses of cortisone are administered.^{9,10} Because in four male patients testicular biopsy specimens showed no significant damage, we conclude that the elevated gonadotrophin levels are not the result of decreased gonadal function.

A report on this phase of the investigation will be published elsewhere.

In this study the use of large doses of cortisone has proved to have no advantage over either low dosage, short-term treatment, or long-term maintenance therapy. It has become apparent that cortisone will produce increasingly good results up to a given level, above which no further improvement may be expected. Furthermore, the rapidity with which the benefits are achieved is not accelerated by the size of doses used.

The observation that the side-effects of cortisone are definitely related to the size of the dose and the duration of the treatment⁸ seems of particular significance and has been confirmed in this study. Since toxicity can be expected to occur with massive doses of cortisone, and no increased antirheumatic response can be achieved or maintained after the cortisone is discontinued, such a program of treatment cannot be advocated. A similar conclusion has been reached by Bayles.²

The criteria of therapeutic response proposed by the American Rheumatism Association have been advantageous in following and reporting clinical cases of rheumatoid arthritis under treatment. We have repeatedly been impressed with the fact that alterations in the functional status of our patients have not been correlated with an appropriate objective change. Moreover, when cortisone or ACTH is given, the problem is intensified because these functional changes are observed so rapidly. Just how many of these changes are due to the altered emotional outlook of the patient, and how many to alteration in the disease process, is difficult to determine. Therefore, we believe that an adequate appraisal of any therapeutic regimen can be made only by using objective changes to determine the therapeutic response.

Summary

Seven patients with severe rheumatoid arthritis were treated with massive doses of cortisone over a short period. This program produced remission of the arthritis in two cases and alterations in the histopathology of the synovial tissue. In every patient side-effects of the steroid appeared, but all were reversible and disappeared after discontinuation of the hormone.

The cortisone-induced remission was not maintained for a significant period of time after therapy in five of the seven patients. The use of short-

term treatment with large doses of cortisone in rheumatoid arthritis is not advocated since it offers no advantage over the routine method of low dose-long term administration, and in addition imposes the added risk of cortisone toxicity.

Acknowledgment

The authors gratefully acknowledge the help and advice given by Dr. Tomihara Hiratzka, Department of Pathology, Wayne University, College of Medicine.

References

1. Bayles, T. B.; Colpoys, F. L.; Fremont-Smith, P.; Ferguson, B. C., and Paige, E.: Significant remissions in rheumatic diseases with high dosage cortisone therapy. *J. Clin. Investigation*, 30:628, 1951.
2. Bayles, T. B.; Colpoys, F. L., Jr.; Fremont-Smith, P.; Ferguson, B. C., and Paige, E.: Clinical and laboratory observations in rheumatic disease following high dose cortisone therapy. *Proceedings of the National Meeting of the American Federation for Clinical Research*, 1952.
3. Chase, J. D., and Wilkinson, J. M.: The treatment of Still's disease with cortisone and gold. *J. Mich. S. M. Soc.*, 50:1026-1028, 1951.
4. Goslings, J.; Higmans, W.; v. Limpte, P. M., and v. Gilse, H.: Prolonged treatment of rheumatoid arthritis with ACTH alone and with gold. *Brit. M. J.*, 2:1019-1025, 1950.
5. Hench, P. S.; Kendall, E. C.; Slocumb, C. H., and Polley, H. F.: The effect of a hormone of the adrenal cortex and of pituitary adrenocorticotrophic hormone on rheumatoid arthritis. *Proc. Staff Meet., Mayo Clin.*, 24:181-197, 1949.
6. Henderson, E.; Gray, J. W.; Weinberg, M.; Merrick, C. Z., and Seneca, H.: Cortisone plus insulin in the palliative treatment of rheumatoid arthritis, a preliminary study. *J. Clin. Endocrinol.*, 11:119-133, 1951.
7. Norcross, B. M.; Lockie, L. M.; Constantine, A. G.; Talbott, J. H., and Stein, R. H.: The effect of cortisone and ACTH on histopathological lesions of rheumatoid arthritis. *Ann. Int. Med.*, 36:751-765, 1952.
8. Polley, H. F.; Ward, L. E.; Slocumb, C. H., and Hench, P. S.: Importance of dosage in prolonged oral administration of cortisone in rheumatoid arthritis. *J. Lab. & Clin. Med.*, 38:937, 1951.
9. Sohval, A. R., and Soffer, L. J.: The influence of cortisone and adrenocorticotropin on urinary gonadotropin excretion. *J. Clin. Endocrinol.*, 11:677-686, 1951.
10. Sprague, R. G.; Power, H. M.; Mason, H. L.; Albert, A.; Mathieson, D. R.; Hench, P. S.; Kendall, E. C.; Slocumb, C. H., and Polley, H. F.: Observations on the physiological effect of cortisone and ACTH in man. *Arch. Int. Med.*, 85:199-258, 1950.
11. Steinbrocker, O.; Traeger, C. H., and Betterman, R. C.: Therapeutic criteria in rheumatoid arthritis. *J.A.M.A.*, 140:659-665, 1949.
12. Weisel, L. L.; Barritt, A. S., Jr., and Stumpe, W. M.: The synergistic action of paraminobenzoic acid and cortisone in the treatment of rheumatoid arthritis, a preliminary report. *Brooklyn Hosp. J.*, 8:148-152, 1950.

Clinical Trial of 11-ketoprogesterone in Rheumatoid Arthritis

By Ivan F. Duff, M.D.,
William D. Robinson, M.D., and
William Q. Wolfson, M.D.

Ann Arbor, Michigan

THE CLINICAL effectiveness of an 11-oxygenated steroid, 11-ketoprogesterone, has been investigated in rheumatoid arthritis and certain laboratory observations recorded. Interest in this steroid was aroused by a report from the Sloan-

relatively low. The steroid was made available by the Upjohn Company, Kalamazoo, Michigan, for intramuscular administration as a suspension (25 mg./cc.) in physiological salt solution containing benzyl alcohol (1.5 per cent). A 200 mg. tablet was employed for oral administration. An aqueous suspension of cholesterol (25 mg./cc.) and a placebo tablet were used for placebo administration.

Clinical Material and Methods

Five hospitalized patients with rheumatoid arthritis, three women and two men, were selected for study (Table I). Their disease varied in duration from six weeks to twenty-seven years. The

TABLE I. CLINICAL MATERIAL AND RESPONSE TO TREATMENT

Case	Sex	Age	Duration	(1) American Rheumatism Association Classification of Disease			Mode of Admin.	Total Dosage	Duration of Treatment	Response to Treatment	Complication
				Activity Grade	Progression Stage	Functional Class					
1. H.K.	F	39	10 years	III	III	III	I.M.	2.2 gm. (2)	8 days	III (Minor improvement)	Local irritation
2. F.F.	M	53	27 years	II	III	III	Oral	3 gm. (3)	3 days	III (Minor improvement)	Dermatitis medicamentosa
3. G.S.	M	48	4-6 weeks	II	I	II	Oral	7.2 gm. (4)	9 days	II (5) (Major improvement)	None
4. F.S.	F	47	8 years	III	II	III	I.M.	2.0 gm. (2)	7 days	III (Minor improvement)	Local irritation
5. I.B.	F	27	6 years	II	II	III	I.M.	2.1 gm. (2)	7 days	III (Minor improvement)	Local irritation

(1) In using the American Rheumatism Association classification, we have found it helpful to grade the activity of the inflammatory process in the joints. This is dependent primarily on the degree of swelling, tenderness, fluid accumulation and increased heat, and is classified from Grade I (Minimal activity) to Grade IV (Maximal inflammation).

(2) 100 mg. q 8 hours—I.M.

(3) 200 mg. 5 x a day—Oral.

(4) 200 mg. tablet (Oral). See text for schedule of dosage.

(5) The strict application of American Rheumatism Association criteria for therapeutic response require that Grade II improvement be maintained for at least one year. This degree of improvement was maintained only a few weeks in this patient.

Kettering Institute⁷ which summarized the comparative effectiveness of certain steroids on the development of the chick embryo. The minimal steroidal dose for selective inhibition of embryo growth (mg. steroid per egg) for Compound F-acetate was 0.015; for corticosterone it was 0.15; for 11-ketoprogesterone it was 0.42; and for cortisone acetate it was 0.45. Further interest in a possible antirheumatic effect was strengthened when it was demonstrated that 11-ketoprogesterone possessed some activity in liver glycogen deposition tests, the standard assay for measuring 11-oxy-steroid effect.² Furthermore, in comparison to cortisone, its potential cost might be expected to be

outline of the American Rheumatism Association was followed in classifying their disease (in terms of activity, progression and functional impairment) and for grading their response to therapy.⁶ The period of steroid administration was preceded and followed, in most instances, by an appropriate placebo. Two patients received the steroid by mouth, in one of whom (Case 2) treatment was stopped at the end of the third day because of the development of dermatitis medicamentosa. The other four patients received the steroid for seven to nine days, with the total dosage varying from 2.2 grams to 7.2 grams. Salicylates and physical therapy, when employed, were kept at a minimum during the study.

The patients were examined daily and symptoms and findings recorded in detail; when possible, objective measurements of joint findings were made with tape measure and goniometer. Sedimentation rates (Westergren), complete blood studies and

From the Rackham Arthritis Research Unit, University of Michigan Medical School. The Rackham Arthritis Research Unit is supported by a grant from the Horace H. Rackham School of Graduate Studies. This study was supported in part by grants from the National Institutes of Health and the Michigan Chapter, Arthritis and Rheumatism Foundation.

serum protein fractions were determined at appropriate intervals. Serum proteins were fractionated by the chemical micromethod of Wolfson and Cohn.⁹ Urinary histidine was estimated by the colorimetric procedure of Chattaway¹ following preliminary autoclaving as recommended by Wells and Lewis.⁸ A modification of the method of Robbie and Gibson⁴ was employed to estimate urinary 17-ketosteroid. Urinary Pettenkofer chromogens were estimated in the crude neutral extracts utilized for 17-ketosteroid determinations by means of the modified Pettenkofer reaction described by Munson, Jones, McCall and Gallagher.³

Results

Case 1.—H. K. This thirty-nine-year-old woman's rheumatoid arthritis was of ten years' duration. Fairly satisfactory response to gold salts was achieved in 1944, in 1945, and 1947. Recent treatment had included cortisone (25 cc. two times a day for four weeks) and a week of ACTH (dosage unknown). Vitamin C and desoxycorticosterone acetate and pregnenolone were without benefit. She was taking twelve to sixteen tablets of aspirin per day at the time of admission on October 1, 1951. The wrists and ankles were the chief site of a chronic synovitis. Pain and stiffness prevented her from walking but a short distance. Morning stiffness was severe. The general physical examination was satisfactory. She weighed 140 pounds. The temperature ranged between 98.6° and 100° F. There was no anemia. The white blood cell count was 8,500. The sedimentation rate (Westergren) varied between 19 to 25 mm. per hour. Using the classification of the A.R.A., the activity of her arthritis was placed in Grade III, progression Stage III, and function, Class III.

Although appropriate measures of physical therapy were continued through the study, salicylates were withdrawn on October 5, 1951; a placebo (cholesterol, 1 cc. three times a day) was given on October 6, 7, 8, and 9. The sedimentation rate at the end of the control period had increased to 35 mm. An upper respiratory tract infection acquired at this time probably explained, in part, the elevation of her temperature to 100°. Subjectively and objectively no change had occurred in her symptomatology or physical findings.

On October 10, 1951, she was started on 100 mg. (4 cc.) of 11-ketoprogesterone every eight hours; this was continued through October 17, 1951, at which time a total of 2.2 gm. had been injected. On October 18, she was changed to the placebo (cholesterol), which was continued for five days. By the second day of treatment with the steroid she demonstrated slight objective and subjective improvement manifested by slight decrease in pain on weight bearing, decreased night pain; the wrist and ankles were less swollen. On the last day of the treatment period (October 18, 1951), however, she was objectively and subjectively worse. In this period of time there was actually an increase in her sedimentation

rate from 35 mm. (October 10, 1951) to 53 mm. (on October 18, 1951). This may very well have been associated with the considerable local inflammation produced by the injections, expressed by soreness, redness, warmth and induration at the injection site, and moderate temperature elevation. In the post-treatment placebo period there was no particular change in her condition except gradual subsidence of the local gluteal inflammation associated with return of the temperature curve to normal. The sedimentation rate at the end of the experiment (October 24, 1951) was still elevated to 45 mm. per hour.

It was our opinion that the improvement (Grade III) demonstrated by this patient during the first few days of administration of the steroid was not different from that often associated with bed rest and physical therapy.

Laboratory Data.—A strict balance study was not made on this patient. She was receiving a general diet. There was no significant fluctuation in her weight. Throughout the study there was a fall of about 1 gm. in the hemoglobin with a corresponding fall in the hematocrit. In the placebo control period the average eosinophil count was 119; during the period of treatment it was 94. There was no consistent change in the serum proteins (chemical fractionation) or the urate/creatinine ratio. The effect of 11-ketoprogesterone upon organic metabolism (Fig. 1) appears to have been definite, however, in terms of increased urinary excretion of histidine, 17-ketosteroids and Pettenkofer chromogens.

Case 2.—F. F. This fifty-three-year-old white man experienced the onset of rheumatoid arthritis in 1924 (at the age of twenty-six) with initial involvement of the toes which lasted for six months. The second episode occurred seven years later, involving the hands, elbows, and shoulders. It was eventually followed by a remission. Seven years later (1940) the third attack developed when he was forty years of age, with involvement of the knees and a flare-up in his hands. In 1942 he was seen at the Mayo Clinic when he was described as being in a state of remission. There was x-ray evidence at that time of cartilage destruction in the hands, wrists, and left knee. Treatment had been largely conservative; a course of gold had been without benefit; cortisone and ACTH (in 1950) had produced no lasting benefit; crutches had been required since 1943. There was no significant allergic history.

Rehabilitation through orthopedic procedures and physical therapy was the goal upon admission to the University Hospital on December 10, 1951. He complained of aching discomfort in the shoulders, hands, knees and feet. All of the joints of the fingers were slightly swollen and tender; he was unable to make more than a 70 per cent fist on the right or a 50 per cent fist on the left. The grip was definitely reduced. There was a slight amount of swelling of both wrists with definite limitation of motion. The elbows were questionably swollen; there was slight limitation of extension on the right. There was very definite limitation of abduction and external rotation of the shoulders. The knees were slightly swollen and slightly tender; they were painful on forced motion.

Flexion was limited to 65 degrees; extension was limited to 125 degrees on the right and 152 degrees on the left; quadriceps atrophy was prominent. The ankles had been relatively spared by the rheumatic process; the subastragalar joints were moderately involved. There was slight

period in which the steroid was administered there was no objective or subjective change. The post-treatment period was characterized by further progressive subjective improvement which appeared to have started coincident with his admission to the hospital.

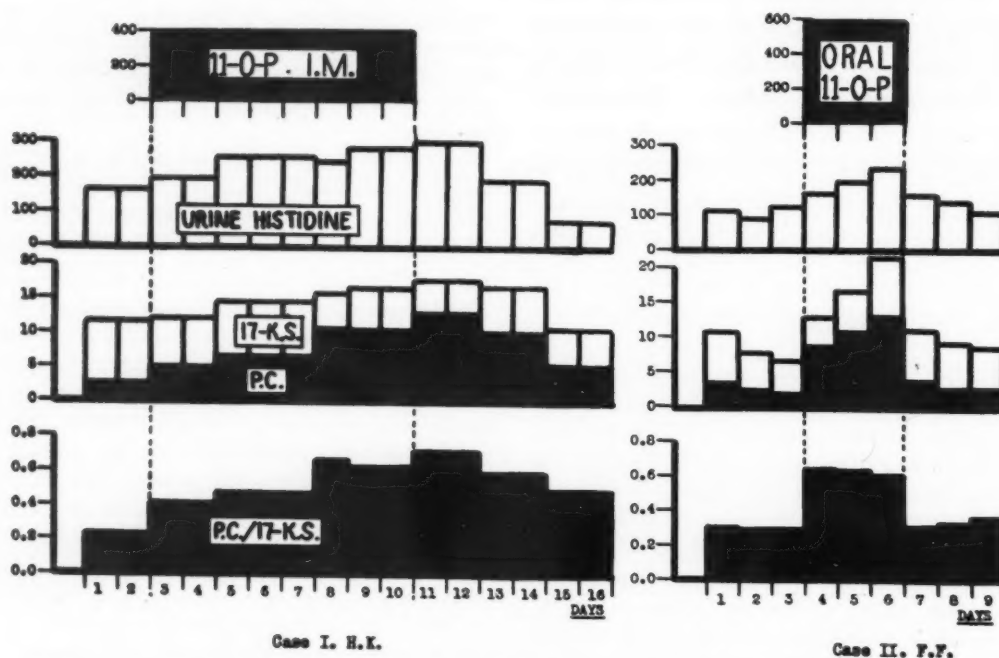


Fig. 1. Increase in urinary excretion of histidine, 17-ketosteroid and Pettenkofer chromogen coincident with the intramuscular injections (Case 1, H. K., thirty-nine-year-old woman) and the oral administration (Case 2, F. F., fifty-three-year-old man) of 11-ketoprogesterone.

tenderness on compression of the toes. X-rays revealed widespread osteoporosis and far-advanced rheumatoid arthritis with secondary degenerative changes. Although many of the finger joints were subluxated, ankylosis was absent. He weighed 133 pounds. The urine was normal; the hemoglobin, hematocrit, red blood cell count, white blood cell count and differential count were normal. The sedimentation rate (Westergren) was elevated to 23 mm. per hour. According to the A.R.A. classification, on the basis of activity, this patient belonged in Grade II; progression was Stage III; functionally, he was placed in Class III.

The observation period of the study was started on December 10, 1951. Medication was limited to chloral hydrate, as required, for sedation; he received no salicylates or physical therapy through the study. On December 14, 1951, he was started on 11-ketoprogesterone, 200 mg. five times a day, by mouth; the last dose was received at 8:00 p.m. on December 16, 1951; the total dosage received was 3 gm. Placebos were not used in the pre-treatment or post-treatment period.

His subjective course, in the four-day period of observation, was essentially favorable. Withdrawal of the salicylates did not appear to increase his discomfort. He slept quite well. In this period there was moderate subjective improvement with increased ease in getting about the hospital. Morning stiffness and soreness of the joints did not greatly change. During the two-day

The study was interrupted because of the development, twenty-four hours after the first dose of 11-ketoprogesterone, of a pruritic erythematous, papular rash. This first appeared in relation to one ankle but within a few hours had spread to the opposite leg and thighs. Consultants in dermatology agreed that the eruption had the characteristics of a dermatitis medicamentosa, most likely due to the steroid. By December 17, 1951, some fourteen hours after the last dose of 11-ketoprogesterone, there had been considerable reduction in pruritus. The rash completely disappeared in the following week.

During the study period there was actually a slight increase in his sedimentation rate. The remaining laboratory values including the eosinophil count were unchanged; his weight did not change. There appeared to be a significant increase in urinary histidine during the period of steroid administration, correlated with an increase in 17-ketosteroids and the Pettenkofer chromogens (Fig. 1).

It was concluded that the clinical course of this patient did not significantly differ from that anticipated in patients treated by only conservative measures.

The period of treatment with the steroid, of course, was too brief to make any valid observations as to anti-rheumatic effect. His clinical course was not markedly changed by administration of 3 gm. of the drug. The skin rash definitely appeared to be related to this medication.

Case 3.—G. S. This forty-eight-year-old man was first seen at the University Hospital on October 1, 1951, with the chief complaint of swelling and stiffness of the fingers of four to six weeks' duration. Other joints had not been involved. The pertinent findings in the physical survey were limited to the hands where there was slight swelling and tenderness of the proximal-interphalangeal and the metacarpal-phalangeal joints. The periarticular structures were slightly thickened; there appeared to be a slight amount of excess joint fluid. Pain was moderate (three plus) on forced motion. He could make less than a 50 per cent fist, right and left; the grip was markedly reduced (1- plus). X-ray examination of the hands was normal. He weighed 172 pounds. The urine was normal. There was no anemia. The total eosinophil count was 378. It is of some interest that the sedimentation rate (Westergren) was normal and remained so over the period of the next six months. The diagnosis of early rheumatoid arthritis was felt to be tenable on the basis of these findings. The classification according to the A.R.A. was as follows: Stage I with regard to progression, Grade II with regard to activity, and Class II with regard to function.

On October 5, 1951, salicylates and physical therapy measures were stopped. On October 6, a placebo of ascorbic acid, 50 mg. three times a day, was started which was continued through October 9. On the morning of the latter date, he reported joint pain to be less and improvement in his ability to make a fist. On examination, swelling of the fingers appeared less generalized; he could now make an 85 per cent fist.

On October 10, he was started on 11-ketoprogesterone by mouth, 200 mg. three times a day. On October 12 this was increased to 200 mg. four times a day, and on October 13 to 200 mg. five times a day, being continued at this dosage through 8:00 a.m., October 18, 1951. A total dosage of 7.2 gm. of the steroid was administered.

Clinical notes were as follows during this period of time: On October 12, he stated that he was not quite as well as he had been in the preceding twenty-four hours. A day later, he reported no particular change; the improvement manifested earlier, however, had persisted. Objectively at this time there was no definite change. By October 15 (the sixth day of 11-ketoprogesterone) he reported two episodes of uncontrollable twitching of the leg muscles which awakened him from sleep. His hands appeared improved on the basis of reduced morning stiffness. He could now make a 90 per cent fist; the grip had increased to a 3-plus. The fingers were no longer definitely swollen; tenderness was still present in the metacarpal-phalangeal and proximal-phalangeal joints and forced motion was uncomfortable. By October 18, 1951, the patient reported further improvement. He could now make a complete fist; stiffness, aching and pain were definitely less in his hands. On objective examination there was no doubt about the improvement in comparison to the state at the start of the study. Return of the patient to a placebo for a week was unaccompanied by further objective or subjective change and there was no relapse.

During the study there were no significant changes in the urinary findings, the red blood cell count, the hemo-

globin, the hematocrit, or serum proteins (chemical fractionation). Sedimentation rate remained normal throughout the study. Daily eosinophil counts revealed no significant change. There was no consistent change in his total white blood cell count nor in the differential count. There was no definite change in the ratio of serum urate to creatinine during the various periods of the study.

The improvement which occurred in this patient (Grade II) became evident during the placebo period. It continued progressively throughout the period of active treatment and persisted during the post-treatment period. He was discharged on October 19, 1951. When he was next seen on November 9, 1951, improvement had persisted, since he could now make a complete fist and the grip had increased to 4-plus right and left. We next saw this patient some four months later, in which period of time he had experienced a moderate exacerbation of symptomatology. His subsequent course left no doubt regarding the diagnosis of rheumatoid arthritis.

Case 4.—F. S. This forty-seven-year-old woman had rheumatoid arthritis of eight years' duration. Treatment had been conservative; a course of gold given five years before had not been of benefit. Hormonal therapy administered in another hospital had produced only partial and temporary relief. The current flare-up of her disease had started in May of 1951, and had been progressive to the time of her admission to the hospital on September 13, 1951. Diabetes mellitus, known for at least ten years, had been fairly well controlled by 35 to 40 units of protamine zinc insulin daily.

The physical findings included moderate obesity (she weighed 172 pounds), early diabetic retinopathy, and marked varicosities. The blood pressure was 150/90. There was swelling of the proximal and metacarpal-phalangeal joints of the fingers. She could make a full fist on the right and an 80 per cent fist on the left. The grip was definitely weak. The right wrist and left elbow were definitely involved; motion of the shoulders was limited and painful. Both knees were similarly involved by a chronic active synovitis. X-rays of the hands and knees revealed juxta-articular osteoporosis with cystic areas within the shaft of the metacarpal and phalanges. The activity of the disease (A.R.A. classification) was Grade III, progression Stage II; functionally, she was placed in Class III.

Laboratory data included evidence for normal renal and liver function; the fasting blood sugar varied from 164 to 86 mg. per cent. The urine was generally free of sugar. There were 11.6 gm. of hemoglobin and a red blood cell count of 5,000,000; the hematocrit was 40 per cent. The white blood cell and differential counts were normal; the total eosinophil count was 228 cu. mm. The sedimentation rate (Westergren) was elevated to 35 mm. per hour.

Upon admission to the hospital, moderate doses of salicylates and appropriate measures of physical therapy were started and continued throughout the experiment. Over a seven-day period (September 13 to September 20, 1951) on conservative management there was no particular change in symptomatology. On September 20, 1951, she was started on a placebo of cholesterol (4 cc.

or 100 mg. every eight hours). In this period improvement occurred in the form of decreased joint pain and morning stiffness. Objectively, there was very little, if any, evidence of change. The laboratory details were essentially unaltered except that there was a drop in her sedimentation rate to 27 mm. per hour on September 21, 1951, and to 21 mm. per hour on September 24, 1951.

On September 24, 1951, the patient was started on 11-ketoprogesterone, 4 cc. or 100 mg. intramuscularly every eight hours; this was continued through 8:00 a.m. on October 1, 1951, a total of 2.0 gms. having been injected. Within twenty-four hours it was apparent that the medication was being poorly tolerated, there being local induration, redness, heat, and 2-plus tenderness. There was no striking change in symptomatology at the time she was switched from the placebo to the active preparation; throughout this period, however, she maintained that improvement was progressive. Her appetite was unchanged, as was her weight. Objectively by September 26, 1951, there was some improvement since the joints of the fingers were definitely less swollen, sore and tender. She could now make a full fist and had a 1-plus grip. The left elbow was less painful and could be more fully extended. The shoulders were unchanged. The left knee was definitely less swollen and less painful on passive motion.

By September 28, 1951, her subjective improvement was evidently sustained. She reported herself now free of night pain and pain on weight bearing and walking. Objectively she was maintaining the improvement noted earlier in the hands and in the grip. The metacarpal-phalangeal joints of the fingers were now less swollen; the wrists and elbows were about the same. The shoulders were less painful. There had been no particular further change in the knees. She continued to tolerate the steroid poorly; there were induration, redness and heat present at the site of injection, associated with a rise in the temperature to as high as 101° and 100.8° on September 29 and September 30, respectively.

From October 1, 1951, to October 5, 1951, the placebo of cholesterol (4 cc. every eight hours) was re-instituted, being gradually decreased until it was stopped on October 5, 1951. In this period there was progressive fall of the temperature curve to normal. While on the placebo, progressive and objective improvement continued. On the last day of the study, October 5, 1951, the proximal phalangeal joints of the fingers were still slightly swollen and the joint capsules were slightly thickened. She could make a tight fist and her grip was a good 3-plus. There was questionable swelling of the metacarpal-phalangeal joints of the fingers and slight thickening of the joint capsule. The wrists were no longer swollen. The range of motion was essentially normal. There was slight discomfort in the right wrist at the extreme range of motion. There was very little discomfort on movement of the left elbow but there was limitation of extension. There was full motion in both shoulders with slight discomfort at the extreme range of motion. The right knee was still slightly swollen; it was still painful (1-plus) at the extreme ranges of motion. It was apparent that there was still active synovitis present in the right knee, right wrist, and questionably in the fingers. A check-up

examination was made eleven days later, at which time she appeared to be doing quite well; this state was maintained at the time of her last visit on February 19, 1952.

In association with injection of 11-ketoprogesterone, instituted on October 1, 1951, there was a climb in the sedimentation rate to 48 and 53 mm. per hour (on October 1 and October 3); this was compatible with the degree of local inflammation. Cessation of treatment was associated with a gradual fall in sedimentation rate. There was a slight fall in hemoglobin to 10.3 grams and a concomitant fall in hematocrit to 36 per cent; this was probably associated with the repeated vena punctures. The red blood cell count did not change. There was no change in the white blood cell count. The differential count revealed some increase in the percentage of polymorphonuclear cells (from 73 per cent in the placebo control period to 82 per cent on October 1, 1951). The total eosinophil count did not change. The serum protein pattern (chemical fractionation) did not change.

In summary, this patient in the control period demonstrated subjective improvement. Objective improvement (Grade III) developed during the period of administration of the steroid. Both subjective and objective improvement were maintained in the subsequent placebo period. The changes which took place were quite compatible with those not infrequently produced by hospitalization and a sound conservative program of management.

Case 5.—I. B. This twenty-seven-year-old woman had experienced the onset of joint discomfort six years earlier, five months after parturition. Symptomatology consisted of early morning and late afternoon stiffness; night pain was present, fatigue was prominent and had recently necessitated giving up her employment as a clerk. There had been a 10 pound weight loss in the last year. The physical examination revealed her to be well developed and fairly well nourished. There were shotty lymph nodes palpable in the neck; nodes were also palpable in the axillary and epitrochlear regions. The edge of the spleen was palpable below the costal margin on deep inspiration. A chronic active synovitis was present in the second and fifth left terminal phalangeal joints, in all of the proximal phalangeal joints, and the right fourth and fifth metacarpal-phalangeal joints. There was a 1-plus collection of fluid in the tendon sheath on the dorsal surface of the right wrist; the left wrist was questionably involved. There was a 1-plus swelling at the ankles. All of these joints were definitely tender. Her ability to make a fist was definitely impaired and the grip was weak. She weighed 118 pounds.

The urine was normal. She had a definite anemia, the hemoglobin value being 9.2 grams with a red blood cell count of 4.8 million. The hematocrit was 35 per cent. There was hypochromia and some variation in the shape of the red blood cells. The white blood cell count was 6,373. The differential film revealed 84 per cent polymorphonuclear cells, 14 per cent lymphocytes, 1 eosinophil and 1 monocyte; there were 3 eosinophils per cu. mm. The sedimentation rate was elevated to 53 mm. In accordance with the classification of the A.R.A., her

arthritis as to progression was put in Stage II; activity, Grade II; functionally she was placed in Class III.

On June 14, 1951, 11-ketoprogesterone was started in a dosage of 300 mg. daily (100 mg. every eight hours intramuscularly). Additional medication consisted of 10 grains of aspirin four times a day; specific physical therapy was not carried out during the study. The injections were continued through midnight on June 20, 1951, at which time an intramuscular placebo of cholesterol was started. By the second day the injections of the steroid were associated with considerable aching; locally there was superficial redness, induration, and tenderness. About one and one-half hours after an injection she described a sensation of pressure and tenderness which would last for about six hours; discomfort was sufficient to keep her awake at night.

By June 18, 1951, the third day of the study, the patient reported that she was improved; there was less morning stiffness, aching and pain. The right wrist, used as a joint of reference, disclosed slight but definite decrease in fluid content of the tenosynovitis. The other joints were correspondingly improved; tenderness of the metatarsal joints of the toes had disappeared. By the fourth day of treatment the right ankle was somewhat more swollen; there was now a small collection of fluid about the external malleolus.

At the conclusion of the period of injection of the active material (June 20, 1951) the patient reported that the joint pain, stiffness and soreness had subsided. The general details of the physical examination were unchanged. Objectively there was slight but definite evidence of joint improvement; they still remained slightly swollen. Only the fingers and ankles were slightly tender. There was no longer definite swelling of the right wrist.

In association with change to the placebo (June 21, 1951) soreness and the induration produced by the steroid disappeared rapidly. Within twenty-four hours of the change the patient reported herself less well. Objectively this appeared to be true since the joints of the fingers appeared more swollen; all of the joints were more irritable. The collection of fluid at the ankles was unchanged. For a period of twenty-four hours or so she complained of considerable soreness and distress in the shoulders. By June 27, 1951, however, on the sixth day of placebo injections, she reported that she was doing quite well. Her appetite was good. The local soreness of the joints had largely subsided. Examination now revealed objective improvement inasmuch as swelling and tenderness had decreased. The status of the patient was essentially that described as present on the last day of treatment with the active material.

This patient was closely followed throughout the study, in which a placebo preparation was not used prior to the administration of the steroid. We agreed that convincing improvement had occurred coincident with injection of 11-ketoprogesterone. A brief but definite relapse developed while on the placebos, from which, however, she recovered spontaneously with a favorable course thereafter. The degree of improvement, in our opinion, was no more than one might anticipate coincident with hospitalization and institution of conservative therapy.

The pertinent laboratory evaluations throughout this study were as follows: The initial count was so low that the eosinophil response could not be accurately followed. There was no significant change in the total white blood cell count, nor was there any significant change in the differential count. The sedimentation rate failed to correlate with the clinical improvement since it remained elevated throughout the study (ranging from 57 to 40 mm.). The pattern of serum proteins (chemical fractionation), the hematocrit, and weight did not change.

Discussion

Gradual subjective and objective improvement occurred in all five individuals during the investigations; this was not accompanied by convincing changes in sedimentation rates. Improvement, in four instances, has been placed in Grade III (minor improvement); in one patient, it deserved placement in Grade II (major improvement), although the improvement was not maintained long enough to meet the strict requirements for such classification. In general, the degree of improvement was quite compatible with that frequently observed when hospitalization is combined with elementary conservative therapy. As is evident in the individual case reports, improvement generally began during the preliminary placebo period; it was maintained through the period of steroid administration and into the post-placebo interval. In the three individuals receiving systemic treatment and which produced local irritation, the possibility of non-specific foreign protein reaction must be considered in evaluating response to treatment. In no instance were the dramatic effects observed with 11-ketoprogesterone which are so conspicuous both upon starting and discontinuing cortisone or ACTH. None of the characteristic features of the hyperadrenal state, as may be induced by cortisone or ACTH, were observed during the brief period of administration of 11-ketoprogesterone.

The three individuals to whom the parenteral preparation was administered, tolerated the injections very poorly. In view of the considerable local inflammation, further parenteral trial did not appear advisable. In all instances, within a few days of withdrawal of the steroid, prompt subsidence of the inflammation had occurred. The possibility of inadequate absorption exists, of course, in those individuals in whom the parenteral route was employed. Sufficient steroid was absorbed, however, to induce metabolic changes (Fig. 1) in one individual (Case 1) quite comparable to those ob-

TABLE II. LABORATORY DETERMINATIONS IN 11-KETOPROGESTERONE STUDY

Case	Weight Change	Eosinophil Change	Sed. Rate	Gamma Globulin	Albumin Globulin	Histidine	Urinary Excretion		Serum Urate Creatinine
							17-KS	(¹)PC/17-KS	
1. H.K.	None	None	Increased(²)	No change	No change	Increased	Increased	Increased	No change
2. F.F.	None	None	No change	—	—	Increased	Increased	Increased	No change
3. G.S.	Loss of 1 1/4 pounds	None	(Normal) No change	No change	No change	—	—	—	No change
4. F.S.	None	None	No change	No change	No change	—	—	—	No change
5. I.B.	Loss of 3 pounds	None(³)	Increased(²)	No change	No change	—	—	—	—

(¹) Pettenkofer chromogen/17-ketosteroid ratio.

(²) Probably in association with local inflammation produced by steroid.

(³) Initial eosinophil count only 3/eu. mm.

served in another patient (Case 2) who received the steroid by mouth.

Some of the metabolic indices measured in this study (Table II, Fig. 1) included: change in weight, total eosinophil counts, sedimentation rate of red blood cells, alterations in serum protein fractions (gamma₂ globulin and albumin/globulin ratio) and serum urate/creatinine ratio. No significant variations in these values were observed. In two individuals (Cases 1 and 2) measurements were made of the urinary excretion of histidine, 17-ketosteroid and the Pettenkofer chromogen/17-ketosteroid ratio. Significant and characteristic increase in these values following the oral and parenteral administration of 11-ketoprogesterone is interpreted as evidence of an organic metabolic effect by the steroid. The significance of these observations, in the absence of an antirheumatic effect, is unknown; a similar effect upon organic metabolism without antirheumatic effect has been observed upon the administration of corticosterone (Compound B).⁵

The evaluation of the clinical effectiveness of any agent in rheumatoid arthritis is beset with many difficulties. The cases reported in this paper illustrate particularly the necessity of taking into consideration the spontaneous variations in the course of the disease and the degree of improvement which may occur with hospitalization, analgesics and physical therapy. Under these circumstances, observations during periods of placebo medication are indispensable.

Conclusion

On the basis of this study, it appears that 11-ketoprogesterone, an 11-oxygenated steroid, is without significant clinical effect in rheumatoid arthritis. The steroid, however, induces some interesting alterations in organic metabolism in terms of increased urinary excretion of histidine, 17-ketosteroid, and Pettenkofer chromogens.

References

1. Chattaway, F. W.: Estimation of histidine in urine and its excretion by normal and pregnant women. *Biochem. J.*, 41:226-230, 1947.
2. Hailman, H. F.: Personal communications.
3. Munson, P. L.; Jones, M. E.; McCall, P. J., and Gallagher, T. F.: Colorimetric method for estimation of dehydroisoandrosterone and its application to urine extracts. *J. Biol. Chem.*, 176:73-82 (Oct.) 1948.
4. Robbie, W. A., and Gibson, R. B.: Rapid clinical determination of urinary 17-ketosteroids. *J. Clin. Endocrinol.*, 3:200-205 (April) 1943.
5. Robinson, W. D.; Wolfson, W. Q., and Duff, I. F.: Studies on the metabolic and antirheumatic effects of corticosterone (Compound B). *Proc. annual meeting, American Rheumatism Association* (June) 1952.
6. Steinbrocker, O.; Traeger, C. H., and Batterman, R.: Therapeutic criteria in rheumatoid arthritis. *J.A.M.A.*, 140:659-662 (June 25) 1949.
7. Stock, C. C.; Karnofsky, A., and Sugiura, K.: Studies of steroids for inhibition of normal and abnormal growth in experimental animals, symposium on Steroids in Experimental and Clinical Practice. Pp. 50-71. Philadelphia: Blakiston Co., 1951.
8. Wells, G. S., and Lewis, H. B.: The histidine content of the urine in pregnancy. *Am. J. Obst. & Gynec.*, 61:1123-1128 (May) 1951.
9. Wolfson, W. Q., and Cohn, C.: Rapid Chemical Micromethods for the Analytic Fractionation of Serum Proteins. Ann Arbor: Overbeck Press, 1952.

MSMS

U. S. JOBS HIT PEACE PEAK

Upward and upward crept the multi-billion-dollar Federal payroll in the past year—to a new post-World War II peak of 2,596,690.

This was an increase of 112,999 employees in 12 months.

As of June 30, the end of the past fiscal year, one out of every 38 United States citizens twenty-one years of age, or older, was working for the Government. Working, that is, as a civilian—these figures don't include men and women in military uniform.

They do, however, include civilian employees of the armed forces—and that's where the big increase in the last year came.

Observations on the Use of Cortisone and Corticotropin in Rheumatoid Arthritis

By Alvin E. Price, M.D., Wm. S. Reveno, M.D.,
J. J. Lightbody, M.D., E. C. Vonder Heide, M.D.,
H. A. Kashtan, M.D., and K. E. Corrigan, Ph.D.
Detroit, Michigan

IN A PREVIOUS article* we reported on the use of cortisone in the treatment of sixty-three patients with rheumatoid arthritis. During the past year we have continued our observations on forty-five of these patients and to these have added twenty new patients receiving this same steroid, twelve** treated with corticotropin, and thirteen who were given intra-articular injections of hydrocortisone (Compound-F). The discussion which follows details the results in these three groups of patients and includes, in addition, a report on the measurement of thyroid function by isotope tracer studies in patients receiving anti-arthritic therapy.

I. Cortisone and Corticotropin Treated Patients

In this group were twenty-one males and fifty-three females, ranging in age from eighteen to sixty-seven years. All had multiple joint involvement, with the duration of their illness varying from several months to over thirty-five years. Prior to the institution of steroid therapy, most patients had received a wide variety of treatments with varying response. During the course of our study analgesics and physical therapy were used liberally and frequently in most cases. All patients were provided with a diet having a salt content under 1 gram.

Oral cortisone was used for maintenance in all patients treated with this drug. In most, treatment was started with parenteral cortisone or corticotropin for varying periods of time depending upon the availability of the oral preparation. With the former, 300 mg. were given the first day, followed by 100 mg. daily for four to five days; with the latter, 25 mg. were injected every six hours for several days, followed by a gradual tapering off

until the cortisone tablets were started. These were given in doses of three to four 25 mg. tablets a day at equally spaced intervals for several days, then followed by a maintenance dose of one to three 25 mg. tablets a day. While this dosage has been followed quite constantly throughout the entire course of treatment, several patients have had to take an extra tablet during periods of exacerbation of symptoms, while others have been able to reduce the dose to one tablet a day during periods of remission.

In ten patients, corticotropin (ACTH) was continued throughout the course of treatment in maintenance doses varying from 10 mg. daily to 25 mg. three times a week. Generally from 20 to 25 mg. were administered daily in single or divided doses by the patients themselves or by members of their families.

Six patients received the initial injections of corticotropin *intravenously*. When so administered, 25 mg. in 1000 cc. of 5 per cent glucose were injected slowly over a period of six to eight hours. This was repeated the following day; from then on, the dose was reduced to 15 mg. and then to 10 mg. each for two days. Following this, the subcutaneous route was used. In one patient a clinical relapse occurred while on subcutaneous treatment. Intensive intravenous treatment checked the relapse, following which the usual subcutaneous administration became adequate.

Complications

Edema of varying degree developed at some time in the course of therapy in twenty-nine patients receiving cortisone but was of significant degree in only eleven. In none of these had salt restrictions been rigidly adhered to. In one case it was necessary to discontinue the drug at intervals because of dyspnea and marked gain in weight due to fluid retention. None of the corticotropin-treated patients developed significant peripheral edema. Facial edema with the characteristic moon-round configuration typical of Cushing's syndrome developed in fifteen. Two of these had been treated with corticotropin.

Facial hirsutism of mild degree developed in twenty-one and was of moderate degree in an additional six patients. In two there was noticeable thinning of scalp hair. Three patients in this group had received corticotropin.

Cutaneous lesions of several different types were observed. Papulopustular acneiform eruptions ap-

From the Research Division, Harper Hospital. Supported by a grant from the Michigan Chapter, Arthritis and Rheumatism Foundation.

*J.M.S.M.S., 50:1015-1018 (Sept.) 1951.

**Includes three patients previously treated with cortisone.

peared in fifteen patients. In some of these either androgen or estrogen therapy had been administered simultaneously with the steroid, and the acne improved upon withdrawal of the sex hormones. A mild erythema was noted in several and in one this assumed a butterfly distribution resembling lupus erythematosus. This disappeared after withdrawing the cortisone. One patient on corticotropin developed dark pigmentation, almost a bronzing of the skin, principally on the exposed areas, but there was no mucous membrane pigmentation or lowering of the blood pressure.

An increased tendency to bruising was noted in five cases. In three treated with cortisone, purpuric lesions developed spontaneously from time to time. In one of these scleral hemorrhage and epistaxes also occurred. The bleeding and clotting times were not abnormal in these cases. Bleeding from the gastrointestinal tract was observed in one of the patients included in our first report. Here the bleeding time was prolonged to 12 minutes. No cause for the bleeding could be found by careful x-ray studies.

Psoriasis, present in two of our patients, was not altered by steroid therapy.

Gastrointestinal symptoms developed in eleven patients. The highest incidence was among those treated with corticotropin. In four the symptoms consisted mainly of occasional belching and nausea. In the remaining seven there was persistent heartburn or epigastric pain and five of these were studied by x-ray. Only one who had been getting cortisone had a gastric ulcer. A second patient, symptom-free while on cortisone for eight months, was changed to corticotropin and at the end of five months developed acute perforation of a gastric ulcer after very vague and indefinite digestive disturbance of two weeks' duration. At operation the ulcer was acute and entirely devoid of the usual characteristics found in mucosal ulcerations.

Nervous system symptoms, when classified as simple nervous instability, are present in most arthritic patients, probably the result of long continued pain and limitation of activity. Establishing of an etiologic relationship between these symptoms and any therapeutic agent is therefore difficult. When extremes of mood occur, justification for such a relationship is more apparent. Euphoria appeared in thirty-one cortisone-treated patients and in three treated with corticotropin. A mild depression followed the euphoric state in three

of the former and an acute depressive psychosis developed in one. In three other patients, a mild depression occurred without antecedent euphoria. One patient, treated with cortisone elsewhere very successfully for one month and then observed by one of us (AEP), developed an acute psychosis of the schizophrenic type, requiring hospital confinement under limited restraint for ten months. At this writing, two years after treatment with cortisone, only moderate depression periods and mild hallucinations occur from time to time.

One patient developed marked nervousness and emotional instability after withdrawing cortisone. In another nerve tension was lessened following the institution of cortisone therapy.

Blood pressure levels were found to vary in most patients during the course of therapy. In only eight was an abnormal elevation found at any time. In two of these, subsequent readings after treatment were found to be less than the initial hypertension. In only one patient was a significant increase in the blood pressure noted.

Reduction in sugar tolerance in patients as the result of steroid therapy has been set forth by many as a contraindication to the continued use of these drugs. In a previous publication we reported our observations in thirty-four patients treated with cortisone for a relatively brief period of time. The results were varied; some appeared to develop a reduction in tolerance while in others this seemed to improve. Of some importance, also, was the revelation that a surprising number were found to have a reduced tolerance before therapy was started. The significance of this in determining the effect of any therapeutic agent is readily apparent.

The observations on carbohydrate metabolism herein reported were made over a much longer period of time (from six to twenty-four months) in sixty patients treated with cortisone and fourteen with corticotropin. Oral glucose tolerance determinations were made once before and usually twice after the institution of therapy in fifty-eight patients; in twenty-two no determinations were made before the administration of steroid.

After from six to twenty-four months of cortisone therapy, over half (57 per cent) were found to have a normal sugar tolerance. In eighteen (35 per cent) the tolerance was definitely reduced, and in five (10 per cent) it was considered borderline. In the eighteen whose tolerance was found reduced after treatment, pre-treatment tests had

shown a reduced tolerance of similar degree in nine and a borderline result in one. In only three had the tolerance been normal previously, and in only one of these was the post-therapy reduction at all significant. In the remaining five patients with post-therapy tolerance reductions, pre-treatment determinations had not been done. Conclusions concerning the effect of the steroid therapy in these five patients would be wholly unjustified since, as was true in our results a year ago, reduced sugar tolerance was also found in a significant number of patients (fifteen) before any treatment was given. Of the five "borderline" cases whose glucose tolerance tests were equivocal after treatment, one had previously been equally questionable and four were unmistakably normal.

Of the patients treated with corticotropin, four were found to have a reduced carbohydrate tolerance after from one to ten months of treatment. In one of these an impaired tolerance had been present before treatment; in the remaining three, as well as in the one "borderline" case, the pre-treatment tests were normal. In only one of these was the reduction in tolerance appreciable. In the remaining nine cases the post therapy tolerance was not abnormal.

From the above, it can be concluded that in only two patients was there an appreciable reduction in tolerance, one in the cortisone and one in the corticotropin treated patients.

As was previously found, an apparent improvement in sugar tolerance was observed in eight patients whose pre-treatment tolerance was impaired. In five of these the glucose tolerance test became normal. Interestingly enough, three of the four patients with lowered tolerance before treatment with corticotropin developed normal curves one to ten months after therapy. In two patients treated with cortisone, there was a further reduction in tolerance; this was not observed among those treated with corticotropin. In one case treated with corticotropin, an apparent improvement was noted after two weeks of therapy, but eight months later there developed a noticeable reduction in tolerance. Likewise, of five pre-therapy "borderline" cases, one showed a definite diabetic curve after from nine to twenty-two months of treatment and four developed normal curves.

The effect of the duration of steroid therapy on the production of significant change in the sugar tolerance of these patients was not remark-

able, although the incidence of change was slightly greater in those treated for longer periods of time. Similarly, complete cessation of treatment did not produce a reversal in the reduced tolerance of any of the five patients in whom treatment had been stopped for from one to fourteen months before the final study was made.

Results of Therapy

The immediate beneficial effects of cortisone and corticotropin were quite similar. In practically all patients these became apparent about the third day. The improvement noted was both subjective and objective, with a loss of pain and stiffness, as well as a reduction in size of the affected joints. The improvement in the general sense of well-being was essentially the same in those treated with corticotropin as in those treated with cortisone. As previously indicated, this amounted to a true euphoria in 41 per cent of the patients. As might be expected, the use of corticotropin intravenously produced a more prompt and complete effect than did the usual subcutaneous injection.

As long as the optimum dosage was maintained, the prolonged use of these drugs resulted in continued improvement in the majority of patients. It is our impression that this was especially true with cortisone when given parenterally, although maintenance therapy with oral tablets (cortisone) was equally favorable in the majority of patients. The effect of corticotropin in maintenance doses was usually less spectacular although it maintained a satisfactory remission of symptoms in most instances. This was especially true when administered twice daily although daily injections were adequate in several cases.

Of the sixty-five patients treated with Cortone, 74 per cent were considered to have had a *good* result. Included in this group was one patient with a *malum coxae senilis*, and two with a *Marie Strumpel spondylitis*. In 22 per cent the results were regarded as no better than *fair*. In the remaining two cases, cortisone was considered a *failure*. In both of the latter, the drug was administered for less than three months, highly nervous reactions making continuation of the drug inadvisable.

In the twelve patients receiving corticotropin, the results were similar to those noted above. In 77 per cent, the improvement was regarded as *good*, and in 15 per cent only *fair* results were obtained. One patient who had experienced initial

improvement suffered a relapse, necessitating discontinuation of therapy. The subsequent use of cortisone has resulted in complete control of symptoms. This case was regarded as a corticotropin failure.

The differentiation of "good" from "fair" results was not made by any fixed or specific criteria. Consideration was given not only to the local joint effects, but also to the degree of restoration of the patient to an active life. In practically all patients regarded as having achieved a "good" result, whether treated with one or the other drug, daily occupations were resumed or were carried on with greater ease than formerly. Many of this group were classified as having moderately advanced arthritis with multiple joint involvement.

In the group of seventeen patients (fifteen cortisone, two corticotropin), with only "fair" results, the improvement was most noticeable in the local joint symptoms. Pain and soreness were at least partially relieved, although the relief was less dramatic and usually less marked than that observed in the other group. This was generally not sufficient to enable the patients to resume their former activity. In some, irreversible fibrous ankylosis and bony union in the joints made this impossible. As would be expected, most patients of this group had far advanced arthritis. Six were bed-fast.

Summary

Forty-five patients have been treated with cortisone continuously for two years and twenty patients for one year or less. Twelve patients have been treated with corticotropin for one year or less.

Edema of significant degree developed in only eleven of the cortisone-treated patients. None of the corticotropin treated developed this complication.

Moderate facial hirsutism developed in six patients. Two patients showed noticeable loss of scalp hair.

Acneiform eruptions of the face appeared in fifteen. One patient on corticotropin developed bronzing of the skin on the exposed areas. Three patients on cortisone developed transient purpuric patches without changes in bleeding or clotting time.

One cortisone-treated patient developed a gastric ulcer. Acute perforation of a gastric ulcer occurred in one corticotropin-treated patient.

Euphoria developed in thirty-one cortisone-treated and in three corticotropin-treated patients. A mild depression appeared in three and an acute depressive psychosis developed in one of the former group.

Blood pressure changes occurred in only one patient. Impaired glucose tolerance developed in one patient from the cortisone-treated and one patient from the corticotropin-treated groups. The effect of the duration of therapy was not remarkable.

In so far as the effect on the arthritis is concerned, as long as the optimum dosage was maintained, the prolonged use of these drugs was followed by improvement in the majority of patients. Good results were encountered in 74 per cent of the cortisone-treated and in 77 per cent of the corticotropin-treated. Fair results were observed in 22 per cent of the former and 15 per cent of the latter. Two patients failed to respond to cortisone and one to corticotropin.

II. Intra-Articular Hydrocortisone

We started using hydrocortisone or Compound F shortly after Hollander's report⁵ appeared in December, 1951. To date, thirteen patients have been given a total of ninety-four injections of Compound F, and most of these have been in knee joints. We have also injected several other joints of the body, including shoulder, hip, elbow and wrist joints. The knee injections were given just below the medial edge of the patella without local anesthesia. In most instances variable amounts of fluid were aspirated. On occasion, however, there was a dry tap, and although subjective improvement was noted in these patients, the overall response was not as good as in those where synovial fluid was obtained. Synovial fluid cell counts were carried out wherever possible, and as has been reported by Hollander, the total cell count and polymorphonuclear count were reduced in number after Compound F instillations. It was observed that where the arthritic involvement was most severe with swelling and increased heat, the synovial fluid was paler than normal, somewhat cloudy, and less viscid. Viscosity studies reported by Robinson and Duff⁶ indicate a definite increase in viscosity of the synovial fluid in the hydrocortisone-treated joints. Clinical improvement seems to coincide with the increase in viscosity.

The clinical response to intra-articular hydrocortisone has been variable. Several patients re-

ceived immediate benefit from one injection, lasting in some from four to twelve weeks. Others received no benefit until two or three injections had been given at weekly intervals and then maintained their improvement for from three to eight weeks. Another group of patients reported improvement within twelve hours after the initial injection which lasted three to four days and was followed by relapse. With repeated injections maximum duration of relief may extend for from ten to fourteen days. We have been unable to correlate the degree and duration of clinical improvement with any other objective or subjective factors.

Of the thirteen patients treated, eleven have returned for repeat injections when pain returned, definitely indicating satisfactory subjective benefit from the drug. Clinically, eight of the thirteen had an excellent response, with decreased joint swelling, improved motion and reduced joint heat that followed each injection and continued for from two to twelve weeks. Three of our patients received only moderate benefit with decrease in swelling, stiffness and subjective pain lasting only several days up to two weeks. We have had but one patient who received no benefit at all from Compound F intra-articularly. In this instance the knees were in 75° flexion contracture with dry joint spaces. Another patient received only slight benefit from her first two hip injections and subsequently was unwilling to have this repeated in view of the limited response.

We have used hydrocortisone in conjunction with cortisone and corticotropin in several patients where small maintenance doses of the systemically effective steroids were inadequate to maintain one or two joints symptom free. The addition of intra-articular Compound F in these cases has made it possible to reduce and, on several occasions, entirely eliminate maintenance therapy with cortisone and corticotropin.

Control studies were also carried out in several patients for a total of fifteen injections, using 1 cc. sterile saline solution or 1 per cent procaine solution. In several patients where there was bilateral knee involvement, hydrocortisone was injected in one knee, and the control material, either saline or procaine solution, was administered in the opposite knee. Initially, two patients testified that they had received very substantial benefit from the injections of the previous week and did not indicate any difference in improvement in either knee.

Repetition of saline or procaine solution in one knee and hydrocortisone in the other knee soon proved that the control solutions were no longer beneficial, whereas Compound F continued to give improvement. Those patients who received procaine solution failed to obtain greater benefit than those who received saline, whereas Compound F was of some benefit almost each time it was used.

From our studies we have concluded that intra-articular hydrocortisone is a valuable adjunct to the treatment of rheumatoid arthritis.

III. Thyroid Function in Arthritics Treated With Cortisone and Corticotropin

The project for measurement of thyroid function by serial isotope tracer studies in patients receiving anti-arthritis therapy originated by bringing two fields of interest together. On November 16, 1950, the isotope laboratory had conducted a tracer study on a private patient and had obtained a result indicative of carcinoma of the thyroid.³ The patient had been receiving cortisone for some time and it was noted in the report that this was the first such case studied and that an inter-relationship might exist. It was generally believed⁷ that cortisone had some depressing effect on the thyroid function but at that time the form of depression produced, or the quantitative factors involved, were not known. Permission was asked of the Arthritis Committee to allow the study of some rheumatoid arthritics prior to and during cortisone therapy.

The first case, R.M., studied specifically to detect the influence of cortisone, received the first tracer study on November 20, 1950. This study showed a somewhat abnormal thyroid with a hyperactive focus in the central thyroid region and depression of activity in the lobe areas with a total function well within the normal range, and no evidence of malignant or other degenerative change in the gland.

Nine days later, after the patient had received cortisone at the rate of 300 mg. the first day and 100 mg. per day thereafter, a repeat tracer study showed an almost perfect artificial reproduction of a malignant tracer pattern. The total function in the thyroid was not particularly changed, although the initial rate of uptake in some areas appeared to be slightly accelerated and the total function slightly depressed. The study indicated, therefore, that this pattern could be simulated, and a route

was opened for studying the fundamental chemical and physiological phenomena involved.

In general agreement with the later reports in the literature it was demonstrated that the administration of cortisone in clinically satisfactory quantity depressed the total thyroid function in a reversible manner. It was also shown that some fundamental change in thyroid function takes place. The results of this study have already been published,⁴ and, in summary, it was shown that the chemistry of carcinoma of the thyroid can, in part, be simulated reproducibly by the administration of cortisone.

Meanwhile, the Arthritis Committee, as will be reported elsewhere, had observed that thyroid function as indicated by the basal metabolic rate and clinical observations tended to increase in the early stages of ACTH therapy. At their request the tracer procedure was extended to take in all the new arthritic patients before beginning ACTH and at intervals after therapy was instituted.

The second case, R. F., studied was a patient with an advancing rheumatoid arthritis of twelve years' duration who, however, had had toxic diffuse hyperthyroidism for more than a year. This had been controlled with propylthiouracil, but it was discontinued because she developed a rash. She had received cortisone therapy beginning in July, 1950. The tracer study on January 22, 1951, showed a typical cortisone pattern but also showed a toxic hyperthyroidism. Subsequently, on August 13, 1951, with the patient cleared of all medication, as far as possible, a tracer study was run. It showed a diffuse toxic hyperthyroidism with an entirely normal type of uptake, retention and excretion pattern. The cortisone effect definitely had cleared.

The patient was then given ACTH beginning at the rate of 100 mg. per day and reducing gradually to 25 mg. per day. On the tenth day following institution of this therapy, a tracer study was again performed. In this case the hyperactivity of the gland was so far advanced that very little increase in total function could be demonstrated. It was demonstrated, however, that the abnormal tracer pattern found eight months before had not returned and only the usual pattern indicating toxic hyperactivity remained. Thereafter all available cases were studied.

The number of patients studied is not statistically significant and only gives indication rather than demonstration of the results to be expected. Nineteen arthritic persons received serial tracer

studies before and after anti-arthritic medication.

An evaluation of their thyroid status before any medication was given showed that only two of these could be said to have a "normal" thyroid in the sense that there was no clinical evidence of abnormality and the tracer study showed a uniform normally functioning gland. Three others would be considered "euthyroid" in the sense they had no clinical thyroid abnormality but did show demonstrable abnormality on tracer study. One was a clinical non-toxic nodular goiter and one had a frank toxic diffuse goiter of several years' standing. Twelve of the arthritics were frankly "hypothyroid." Five of the grossly hypothyroid patients had one or multiple concealed toxic adenomata, and of these two had enlargement into the retro-manubrial space without grossly evident superficial enlargement.

In all of the cases studied where any clinical benefit was reported from the anti-arthritic therapy with ACTH, the total excretion of the radioiodine increased and the soft tissue retention decreased. This is an extremely important point, as it explains some of the misunderstandings present in the literature and, again emphasizes the fact that tracer studies which do not take into account all of the factors and end by accounting for all of the tracer are utterly worthless and can be dangerously misleading.

Only ten of the fifteen patients treated with ACTH had valid basal metabolic rate determinations before and after treatment. Eight of these showed a definite increase in the basal metabolic rate, ranging from a gain of + 1 per cent, which, of course, is questionable, to a gain of +28 per cent, with an average gain of 12.4 per cent. The two who did not show any improvement had very definite thyroid disease, one a non-toxic nodular goiter with hypothyroidism and the other an undetermined condition which clinically was suspected of being carcinoma of the thyroid. This patient, however, responded very badly to all medication and throughout the studies had so much edema that tracer study was never satisfactory.

One patient had undifferentiated carcinoma biopsied in a cervical node. Clinically this patient was suspected of having carcinoma of the thyroid with cervical metastases. Three tracer studies were performed in the course of six months, in each case resulting with a report of "no evidence of thyroid malignancy." This patient came to autopsy and was found to have carcinoma of the tonsil. This

is also the patient who showed only a +1 per cent increase in his basal metabolic rate on ACTH therapy, and it should be noted that at this time his general body economy was degenerating badly.

Midway in the project it was discovered that all of the ACTH being distributed throughout the country, including our own, contained a trace of TSH. This may explain the thyroid stimulation. With this in mind, the preponderance of evidence indicates that:

1. The compound or mixture administered as ACTH definitely stimulated function in the thyroid glands, or parts of the glands capable of responding to stimulation. Clearcut demonstrations were made of the fact that where a hyperactive nodule existed, its intrinsic function was stimulated, sometimes at the expense of the rest of the gland.

2. The relief of muscular tension and increase in mechanical mobility with its accompanying improvement in fluid balance decreases the trapping of the radioactive tracer in the extracellular spaces and tends to increase the urinary excretion even in the presence of an increased thyroid function. Exactly this same phenomenon on a purely mechanical basis has been observed in one case of a catatonic schizophrenic. The similar condition as an accompaniment of cardiac decompensation is well known.²

References

1. Berson, S. A., and Yalow, R. S.: The effect of cortisone on the iodine accumulating function of the thyroid gland in euthyroid subjects. *J. Clin. Endocrinol.*, 12:407-422, April, 1952.
2. Birkhill, F. R.; Corrigan, K. E., and Hayden, H. S.: The metabolism of radioactive iodine (I^{131}) in patients with cardiac disease. *Am. J. Roentgenol.*, 67:42-50 (Jan.) 1952.
3. Corrigan, K. E., and Hayden, H. S.: Diagnostic studies with radioactive isotope tracers. *Radiology*, 59:1-17 (July) 1952.
4. Corrigan, K. E., and Hayden, H. S.: The influence of cortisone on the radioactive iodine (I^{131}) tracer pattern. *Harper Bull.*, 9:110-112 (May-June) 1951.
5. Hollander, J. L.; Brown, E. M.; Jessar, R. A., and Brown, C. V.: Hydrocortisone and cortisone injected into arthritis joints. *J.A.M.A.*, 147:629-35 (Dec. 22) 1951.
6. Robinson, William D., and Duff, Ivan F.: Personal communication.
7. Wolfson, W. Q., et al: Corticogenic hypothyroidism: its regular occurrence and clinical significance during prolonged therapeutic administration of ACTH or cortisone (abstract). *J. Lab. & Clin. Med.*, 36:1005, 1950.

MSMS

Intra-articular Hydrocortisone in Treatment of Arthritis

Present Status

By Dwight C. Ensign, M.D., and
John W. Sigler, M.D.
Detroit, Michigan

RECENT LAY PRESS accounts dealing with the use of intra-articular injections of hydrocortisone (Compound F) for the treatment of various types of joint diseases have brought fresh hope to the victims of arthritis, and have led many of these patients to inquire of their physicians the value of this therapy. While this therapy is under investigation at present in many centers, to date, there have been few medical reports. For this reason this brief review of our experience seems justified.

By far the greatest experience with this method of treatment has been that of Hollander and his associates,² originally reported in the *Journal of the American Medical Association*. Their experience, to date, was presented at the meeting of the American Rheumatism Association, June 6 and 7, 1952.¹ Approximately 2,000 intra-articular injections have been administered to approximately 400 patients with various types of joint disease. Improvement sufficient to warrant the procedure as therapeutically practical was observed in 90 per cent. Failure was recorded in approximately 5 per cent. The only unfavorable results were transient exacerbation of symptoms and signs following about 2 per cent of injections. Probable aggravation of disease was noted in one joint which later proved to be tuberculous.

Our own experience with this form of treatment extends over the past six months. One hundred and fifty-two intra-articular injections of hydrocortisone have been made in thirty-one patients, twenty-two of whom have rheumatoid arthritis and nine osteoarthritis. The dose at each injection has ranged from 25 to 50 mg. (1 to 2 cc. of the suspension) in knee joints, which have been injected most frequently. Smaller joints, such as metacarpophalangeal or interphalangeal articulations, require much smaller amounts.

From the Arthritis Division, Department of Medicine, Henry Ford Hospital, Detroit.

Wrists, ankles and elbows respond less well to this form of treatment. The hip joint, because of the technical difficulty in approach and the uncertainty that the material is being injected directly into the joint space, is even less adapted to this therapy. In some instances satisfactory results have been reported with periodic injections. In general, this form of treatment is practical only in patients in whom major symptomatology is confined to one or two joints. It is also applicable to olecranon bursitis and has been used by Hollander and his associates in subdeltoid and prepatellar bursitis as well.

In rheumatoid arthritis, the patients we have found most suitable for intra-articular hydrocortisone have been those who have had a good response to general measures plus chrysotherapy or steroid therapy or a combination of both, but in whom rheumatoid activity remains in one or both knees. Such patients, as a rule, derive definite benefit for periods ranging from seven to twenty-one days, after which re-injection is usually required. Occasionally improvement persists for as long as six weeks, but this is unusual.

Of particular interest to us have been two patients with rheumatoid spondylitis, treated satisfactorily by radiation therapy. Both of these patients had peripheral rheumatoid arthritis limited to the knees. Both responded promptly to intra-articular hydrocortisone, but re-injection has been necessary every three or four weeks.

We have found no way to predict in advance the relief a given patient may expect from intra-articular hydrocortisone, or how long the improvement will last. Occasionally, there will be poor response to the initial injection, with satisfactory improvement following subsequent injections. In no case has a patient developed a refractory state to later injections. For the most part, a good index of the degree of improvement is the patient's willingness to submit to repeated injections as necessary.

In patients with osteoarthritis of the knees, who have not responded satisfactorily to the usual methods of weight reduction, protection of the knees, physiotherapy and salicylates, the intra-articular injection of hydrocortisone offers another approach to therapy. In most instances a very worthwhile symptomatic response occurs, especially in patients of the older age group who otherwise might have required synovectomy or patellectomy to achieve

symptomatic relief. It has been our impression that patients with osteoarthritis of the knees get more prolonged relief from hydrocortisone than do patients with rheumatoid arthritis.

In co-operation with Dr. Fred A. Henny of the Oral Surgical Division of the Henry Ford Hospital, fourteen patients with temporomandibular joint disease have been treated with intra-articular hydrocortisone successfully. Thirteen of the above fourteen patients have osteoarthritis, and one patient a rheumatoid type of involvement. This group of patients will be made the subject of a detailed report at a later date.

The more important advantages of intra-articular hydrocortisone therapy may be summarized as follows:

1. It allows "specific" though temporary therapy to be applied to otherwise refractory joint disease.
2. It permits early ambulation and constructive physical therapy in many cases when joint motion has been limited by pain and swelling.
3. It is particularly useful as a form of local therapy in cases where only one or two joints are involved, without necessitating systemic treatment such as chrysotherapy or oral or parenteral steroids.
4. In other cases it may be used in conjunction with other forms of therapy without conflict.
5. No systemic hormonal effects develop, and no serious local complications have occurred.

A word of caution should be added. Accuracy of diagnosis is of fundamental importance before using intra-articular hydrocortisone. It has been found to be of benefit in rheumatoid arthritis, osteoarthritis, acute gouty arthritis, and traumatic arthritis. It should certainly not be employed in infectious arthritis (tuberculosis, gonorrheal, pyogenic, et cetera).

Time and further experience will clarify the usefulness of intra-articular hydrocortisone. At this time, however, it would appear that in properly selected cases it has a definite though limited place in our armamentarium.

References

1. Brown, Ernest M.; Frain, J. Bruce; Udell, Louis, and Hollander, Joseph L.: Local hydrocortisone in the rheumatic diseases: a summary of seventeen months of clinical experience. Read at the annual meeting of American Rheumatism Association, Chicago, June 6, 1952.
2. Hollander, Joseph L.; Brown, Ernest M., Jr.; Jessar, Ralph A., and Brown, Charles Y.: Hydrocortisone and cortisone injected into arthritic joints. *J.A.M.A.*, 147:1629-1635 (Dec. 22) 1951.

Corticotropin, Protamine Supplement and Plasma Fibrinogen Levels in Chronic Arthritis

By Earl A. Peterman, M.D.
Detroit, Michigan

RHEUMATIC DISEASE is largely chronic in nature due to the fact that a cure has not yet been found. Practically all of the acute cases later on reach a chronic state, regardless of the type of treatment used during the acute phase. At the present time, and until a cure for rheumatic disease is found, the continued search for better methods of controlling the chronic forms of the disease over a long period of time is of the utmost importance.

Many methods and many treatments have been proposed and used for the control of chronic rheumatic disease, but none have continued to hold as much promise for the future as the hormones. Corticotropin offers fair possibilities of being one of the key substances necessary to the control of rheumatic disease. It cannot be considered a cure in itself, but when its proper place is finally found in this complex disease, other key substances may then be fitted into the picture, and eventually an adequate control program may be evolved.

The effects of corticotropin in acute rheumatic disease are now well known. The acute symptoms are dramatically alleviated, only to quickly return again when the hormone is discontinued. Attempts to control rheumatic disease with corticotropin over a long period of time have met with partial success. Holbrook et al¹ found that 20 per cent of the patients could be maintained in complete clinical remission on relatively small doses of corticotropin without any toxic effects. Another 40 per cent of their patients were able to maintain worthwhile improvement estimated at more than 50 per cent, when the corticotropin was administered up to the first signs of adrenal cortical overstimulation. Unsatisfactory results were obtained in the other 40 per cent of their patients because of troublesome side effects.

From the Department of Clinical Pathology, Providence Hospital, Detroit, Michigan. Made possible by a grant-in-aid from the Michigan Chapter, Arthritis and Rheumatism Foundation.

The present report deals first with the results obtained in a group of twenty-six patients who received worthwhile benefit from the long term administration of corticotropin and secondly, this report deals with the results obtained when the corticotropin was supplemented with protamine sulfate and the changes in the laboratory data, especially the plasma fibrinogen levels produced by the protamine supplement.

Procedure

Twenty-six arthritis patients were maintained on sustained corticotropin⁷ treatment over a long period of time in order to determine the efficacy of corticotropin alone as an arthritis control measure. After a sufficient length of time had elapsed to be certain no further benefit could be obtained from the corticotropin alone, the treatment was then supplemented with protamine sulfate* given intravenously or protamine** given intramuscularly in the same gelatin menstruum as the corticotropin.

The usual routine clinical laboratory determinations were made frequently. The erythrocyte sedimentation rate was determined by the Westergren¹² method using the 200 mm. tube, because it is less likely to be affected by changes in packed cell volume than any other technique.⁹

As added correlates of disease activity the serum glucosamine,¹¹ plasma fibrinogen⁸ and blood glutathione¹³ values were also determined.

Theoretical Considerations

The cause of the increased plasma fibrinogen levels, so consistently found in rheumatoid arthritis, has not been explained. Information regarding this mechanism might possibly be of importance in a better understanding of the actual etiological mechanism of rheumatoid arthritis itself.

Laboratory and clinical data have been obtained to support the hypothesis that the increased plasma fibrinogen is produced by a compensatory mechanism brought into function because of a deficiency of thromboplastin, which deficiency in turn is produced by an overproduction of heparin or heparin like substances.

Theoretically, the increased plasma fibrinogen may be a manifestation of one of nature's many protective mechanisms. The increased plasma fibrinogen may be an attempt on the part of na-

*Supplied by Eli Lilly and Company, Indianapolis, U. S. A.

**Sulfate radicle removed with barium carbonate.

CHRONIC ARTHRITIS—PETERMAN

TABLE I. DATA ON TWENTY-SIX PATIENTS GIVEN LONG TERM CORTICOTROPIN TREATMENT FOLLOWED WITH SUPPLEMENTARY PROTOMINE SULFATE

No.	Case	Age	Sex	Diagnosis	Weeks of Treatment	Av. Daily I.U. Dose	Sed. Rate	Plasma Fibrinogen	Serum Glucosamine	Glutathione			Protamine Total	Sed. Rate	Plasma Fibrinogen	Serum Glucosamine	Glutathione			Remarks
										Total	Reduced	% Oxidized					Total	Reduced	% Oxidized	
1	R.F.	60	M	Rheumatoid arthritis 11 years	55	22	57	337	145	46.4	44	5.1	.590	43	262	75	40	32	20	Clinically improved
2	J.G.	46	F	Rheumatoid arthritis 8 years	54	21	20	1370	195	53	48	5	.190	6	255	155	50	45	10	Clinically improved on relatively small dosage
3	M.Q.	64	F	Rheumatoid arthritis 9 years	52	26	24	810	155	58	50.4	13.1	.510	9	410	120	54	46	14.8	Clinically improved
4	E.S.	52	M	Rheumatoid arthritis 5 years	54	14	83	707	105	43.5	42	3.5	1.200	13	435	105	60.5	48.5	19.8	Marked clinical improvement
5	D.M.	42	F	Rheumatoid arthritis 23 years	54	17	26	480	75	54.8	45.5	13.3	.160	32	390	120	61	58	5.1	Treatment inadequate
6	M.C.	43	F	Rheumatoid arthritis 9 years	53	24	84	1100	120	47.9	41.4	13.6	.590	49	505	120	51	49	3.9	No clinical change
7	R.M.	48	M	Rheumatoid arthritis 12 years	52	25	25	1200	80	52.8	51.8	1.3	1.480	17.5	450	110	58.5	55	5.9	Clinically improved
8	B.M.	49	M	Traumatic arthritis knee 2 years	52	12	4	526	120	53	51	3.7	.850	5	280	120	59	57	3.4	See Fig. 1
9	N.G.	50	F	Rheumatoid arthritis 20 years	52	16	50	551	175	52.8	48.4	9.1	1.100	47	955	170	56	50	10.7	Clinically improved
10	B.M.	54	F	Rheumatoid arthritis 7 years	51	19	34	767	130	51.8	50.6	2.3	.770	4	490	110	44.7	42.6	4.7	Excess protamine clinical exacerbation
11	A.B.	40	M	Marie—Strumpel "Poker spine" 16 yrs.	43	18	13	730	105	49.8	48.5	2.6	1.350	35	611	70	46.1	39.2	17.8	Clinically improved
12	M.C.	46	F	Rheumatoid arthritis 22 years	46	16	8	444	80	47.5	43.5	8.4	.180	6	310	75	51	44	12.9	Excess protamine but clinically improved—See Fig. 2
13	O.W.	51	F	Rheumatoid arthritis 19 years	46	17	44	448	105	52.2	50.2	3.9	.140	14	370	115	53	51	3.7	Clinically improved
14	R.C.	30	F	Rheumatoid arthritis 6 years	45	18	33	381	105	40.5	36.8	9.6	.460	45	216	110	58.5	43.5	25.6	Clinical improvement continuing
15	V.B.	59	F	Rheumatoid arthritis 16 years	44	13	47	839	130	47.2	41.4	12.2	.520	62	835	105	43.5	39.8	8.5	Excessive protamine clinical exacerbation
16	B.M.	59	M	Mixed arthritis 16 years	34	12	9	631	95	54	51	5.5	.520	28	396	80	56	51	9.8	No clinical change
17	W.M.	56	M	Arthritis psoriasis 15 years	34	22	58	1200	195	48	47	2.1	.430	22	233	110	49.9	33.3	33.2	Marked clinical improvement
18	E.W.	39	F	Rheumatoid arthritis 9 years	32	21	40	505	70	51	46	9.8	.440	22	321	105	54	46.5	13.7	Clinically improved
19	C.G.	51	F	Mixed arthritis 9 years	30	18	3	377	130	61	54	11.4	.740	8	960	180	59	56.5	3.5	Excessive protamine clinical exacerbation—Fig. 3
20	R.W.	48	F	Mixed arthritis 11 years	19	20	30	338	70	51	49	3.9	.170	20	290	70	50	46	8	Clinically improved
21	A.S.	41	F	Mixed arthritis 2 years	16	21	44	450	105	51	46	9.9	.260	68	395	170	44	37	15.9	No clinical change
22	D.G.	35	M	Mixed arthritis 11 years	16	17	39	353	170	59.2	47	20.6	.850	46	394	130	62.5	60	3.9	Excessive protamine clinical exacerbation
23	V.E.	56	F	Rheumatoid arthritis 10 years	15	22	94	1442	140	63	57	9.5	.630	28	930	80	69	62	10.1	Marked improvement
24	M.K.	49	M	Rheumatoid arthritis 17 years	14	14	16	396	115	51.2	49.4	3.4	.290	10	345	170	51	46.5	8.9	Treatment inadequate
25	M.M.	56	F	Rheumatoid arthritis 12 years	8	21	24	574	118	50.6	46.3	8.4	.290	20	320	130	66	58	12.1	No clinical change
26	I.G.	49	F	Rheumatoid arthritis 10 year	6	24	16	314	95	50	44	12	.180	10	285	155	52.7	44.8	14.9	Clinically improved

ture to maintain the clotting qualities of the blood, so necessary to life, in the absence of sufficient thromboplastin. Both fibrinogen and thromboplastin in normal amounts are necessary to the proper clotting of blood and it is conceivable that a deficiency of one might cause a compensatory increase in the other.

Heparin is present in the blood at all times to safeguard against the intravascular clotting of the blood (thrombosis), but the reason for the presence of excessive heparin or heparin like substances in the blood of rheumatoid arthritis is not clear. However, the employment of protamine sulfate to neutralize these substances would be the most logical way to therapeutically correct the theoretical imbalance in the circulating media.

Both heparin and protamine are powerful anti-thromboplastins, but they have a greater affinity for each other than they have for thromboplastin. For this reason protamine sulfate may be used clinically as an antidote for an overdose of heparin if such should be given therapeutically.

According to the above hypothesis, the plasma fibrinogen level should gradually drop to normal as the excessive heparin-like material is cautiously neutralized by repeated intravenous injections of small amounts of protamine. The theoretically correct amount of protamine would be that amount which is just sufficient to neutralize all the heparin-like substances present. When these are all neutralized and the protamine injections continued, the excessive protamine itself would then act as an anti-thromboplastin. This would be manifested by the plasma fibrinogen returning to its previously high level.

Results

The accompanying chart gives the pertinent data on the twenty-six patients studied with sustained corticotropin. There were nine men and seventeen women, ranging from thirty to sixty-four years of age and having the disease for from two to twenty-three years. Ten of these patients were under corticotropin treatment for one year or longer, but from a clinical as well as the laboratory standpoint they progressed no farther toward a complete remission than did those treated for a lesser period of time. They all seemed to reach a certain stage of worthwhile improvement and then remain about the same regardless of how long the corticotropin was continued. These patients all showed the early or mild signs of Cushing's

syndrome, even though the dosage of corticotropin was small. The clinical signs and symptoms had a tendency to vary somewhat with the source of the corticotropin,[†] as each manufacturer's product varied a great deal in spite of their attempts to standardize it according to the international unit. However, this difficulty will be overcome in the future as the more highly purified product becomes more generally available.

The clinical signs and symptoms were used as a guide for adjusting the dosage of corticotropin up or down, inasmuch as the laboratory data did not reach normal at any time. In those cases where the sedimentation rate came to a normal value, one or more of the other indices indicated continued rheumatic activity. Any attempt to bring all indices to normal by increasing the corticotropin only resulted in undesirable side effects.

The figures for the upper limits of normal for the serum glucosamine compare favorably with the figures for the sedimentation rate, although a closer correlation is obtained in this series when the upper limit of normal is considered to be 90 mg. per cent instead of 110 mg. per cent as used by the authors of the method. The figure of 90 mg. per cent also correlated more closely with the clinical condition of the patient.

No definite conclusions could be drawn from the data on blood glutathione. However, it was noted in a general way that those patients with the higher percentage of oxidized glutathione seemed more able to adjust themselves to their affliction than those in the lower percentage of oxidized glutathione group. Only two patients developed an increase in the blood sugar during treatment. Case No. 9 developed a fasting blood sugar of 330 mg. per cent, and Case No. 15 developed a fasting blood sugar of 189 mg. per cent, but neither patient at any time gave rise to glutathione data which would distinguish them from other members of the series.²

The plasma fibrinogen level in this series proved to be the most reliable index of clinical rheumatic activity. All twenty-six patients had fibrinogen levels considered to be elevated above normal and all cases had definite clinically active rheumatic disease. This is in contrast to the six cases reaching a normal sedimentation rate, giving a 23.1 per cent error in this series for that index.

[†]Supplied by Wilson Laboratories, Chicago; Armour and Co., Chicago; Parke Davis and Company, Detroit; Organon, Inc., Orange, New Jersey.

When corticotropin was supplemented with protamine sulfate according to the theory given above, the results were very much as expected. As little as 30 mg. intravenously each day was usually

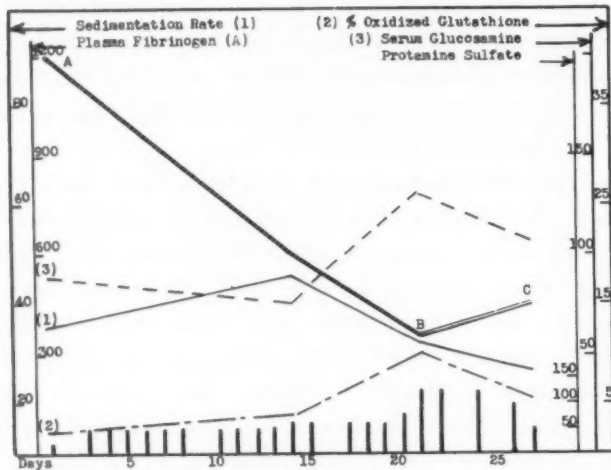


Fig. 1. Physiologic effect of protamine supplement (Case 7), showing decrease in plasma fibrinogen (line A B), as the protamine neutralized the theoretical excessive heparin and heparin-like substances in the blood. With these all neutralized at B, the protamine itself then acted as an antithromboplastin, which in turn produced a compensatory increase in plasma fibrogen shown by double line B C.

enough to produce a continuous lowering of the plasma fibrinogen to the normal level, and in practically all instances the patients volunteered the information that they felt much better even though they had no knowledge of a change in treatment. The patients with the higher fibrinogen levels required from 50 to 75 mg. per day, to maintain a continuous drop, and in some instances where 100 mg. or more were given daily the drop in fibrinogen levels became so rapid that the end point could not be determined in time to prevent a complete exhaustion of the patients' store of heparin, as indicated by a very rapid reversal of the fibrinogen curve, which rose again to levels considerably higher than the original. Theoretically, the ideal dosage would be that amount which would be just sufficient to maintain the plasma fibrinogen at just the normal level. Any more or any less would cause the fibrinogen level to rise.

There were no untoward symptoms evident at any time from the administration of such a small amount of protamine. Even in those cases having a severe reversal of the fibrinogen curve, the prothrombin time, clotting time and bleeding time all remained within normal limits.

In those cases having a reversal of the plasma fibrinogen level due to overstepping the ideal pro-

tamine dosage, the sedimentation rate and the serum glucosamine levels also rose to new highs, while the percentage of oxidized glutathione dropped markedly.

In all instances there was noticeable clinical improvement in the patient when the plasma fibrinogen level was receding. Four of the five patients receiving a slight excess of protamine had a sudden reversal of their fibrinogen, sedimentation rate and glucosamine curves and a concurrent return of clinical symptoms. One patient (Case 11, Fig. 2) had no recurrence of symptoms although his curves all showed a new temporary high, due to excess protamine.

Figure 1 is a graph constructed from the actual laboratory data of a forty-eight-year-old male factory worker, extensively crippled by rheumatoid arthritis for the past twelve years. He had been receiving sustained corticotropin up to the point of adrenal cortical overstimulation for about one year (Case 7). At the time protamine sulfate was started in his treatment, his plasma fibrinogen level was very high. He received eleven intravenous injections of 50 mg. each during the first two weeks. His clinical condition improved markedly and his fibrinogen level dropped about 50 per cent. While his serum glucosamine value dropped, his sedimentation rate rose slightly higher. There was a slight rise in the percentage of oxidized glutathione. For the following week, the protamine sulfate was increased to 70 mg. daily. The plasma fibrinogen showed a further decrease and the sedimentation rate also dropped. The serum glucosamine value and the percentage of oxidized glutathione jumped to higher levels, and the patient was doing remarkably well, clinically. At this point the protamine sulfate was increased to 130 mg. daily. By the fifth day, after three treatments had been given, the patient noted a slight return of clinical symptoms. These persisted and the protamine was discontinued on the twenty-seventh day. There was a slight but definite rise in the plasma fibrinogen level and a decrease in the sedimentation rate as well as the percentage of oxidized glutathione. This slight rise in the plasma fibrinogen level was interpreted as being caused by a slight excess of protamine sulfate, hence its discontinuance. The corticotropin was continued as usual and by the third day after discontinuing the protamine, the patient was symptom free. All

his laboratory data came within normal limits for the first time.

Figure 2 is a graph constructed from the actual data of a man, aged forty (Case 11), with Marie-

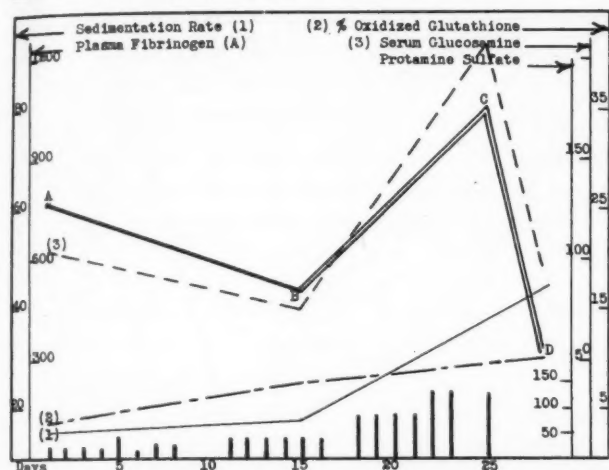


Fig. 2. Physiologic effect of protamine supplement (Case 11), showing result of excess protamine administration. Line A B represents the plasma fibrinogen level presumably elevated by excessive endogenous heparin or heparin-like substance while double line B C D represents the increased plasma fibrogen due to excessive exogenous protamine.

Strümpel type of arthritis ("poker spine") present for sixteen years. This graphically illustrates the sudden rise in the plasma fibrinogen to a point higher than the original when a relatively large excess of protamine was present and the sudden drop to practically normal level when the protamine was discontinued. This was the only patient who did not suffer a recurrence of arthritic symptoms when an excess of protamine was given. His arthritic activity stopped during the first fifteen days of treatment, and has not returned up to the present writing. His prothrombin time, bleeding time, and clotting time all remained normal. The only significant finding was a drop in platelet count from 396,900 on the day of the last protamine treatment to 199,600, three days later (50.4 per cent). Theoretically, this might be expected as the platelets are mobile concentrates of thromboplastin.

Figure 3 is a graphic record of the data obtained from a fifty-one-year-old female office worker slightly crippled by the presence of both rheumatoid and hypertrophic arthritis (Case 19). Her plasma fibrinogen level was only slightly increased after seven and one-half months of sustained corticotropin treatment. All other indices were normal and her clinical complaints were slight but nevertheless quite real to her. Without giving her

any indication of a change in treatment, small amounts of protamine were added to the gelatin menstruum of the corticotropin as shown on the graph. The day after the second protamine sup-

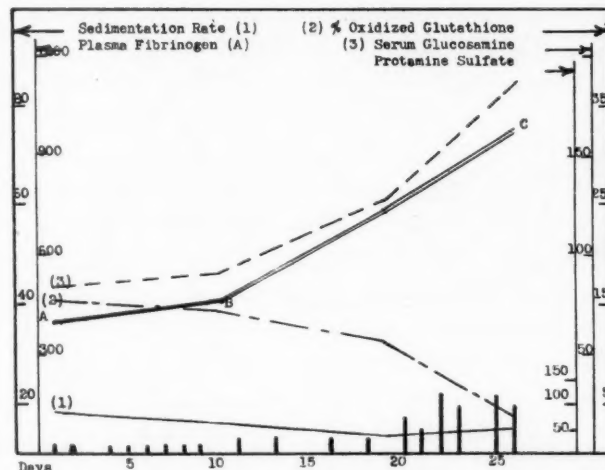


Fig. 3. Graphic presentation of data on Case 19, showing physiologic effect of small amount of protamine supplement when the plasma fibrinogen level is near normal and demonstrating that an exacerbation of acute symptoms with laboratory data corresponding may be produced under these circumstances by comparatively small amount of protamine.

plementation she volunteered the information that she felt unusually good. This lasted for about one week, until the protamine was increased. With each additional increase in protamine her clinical symptoms became worse until she was experiencing the most severe attack of arthritis since the beginning of her corticotropin treatment. As soon as it became definite that she was receiving an excess of protamine, even though the total amount was relatively small, the protamine was discontinued. The corticotropin was continued and by the third day the clinical symptom had subsided completely. This graph illustrates many things, chief of which are that an acute arthritic attack can be produced with protamine under the right conditions and that arthritis individuals having a normal or near normal plasma fibrinogen level are extremely sensitive to the action of protamine. It also illustrates the effectiveness of protamine when given intramuscularly.

When this graph is compared with Graph 1, it can readily be seen that patients with a high plasma fibrinogen level require much more protamine to reduce the level to normal or to develop signs of excess protamine.

Figure 4 is the graphic presentation of data illustrating the fact that exogenous corticotropin is not necessary to the action of protamine. This data

was obtained from a sixty-three-year-old housewife whose chief complaints were severe persistent occipital headaches and stiffness of the neck. X-rays of the cervical spine showed the typical bony spurs

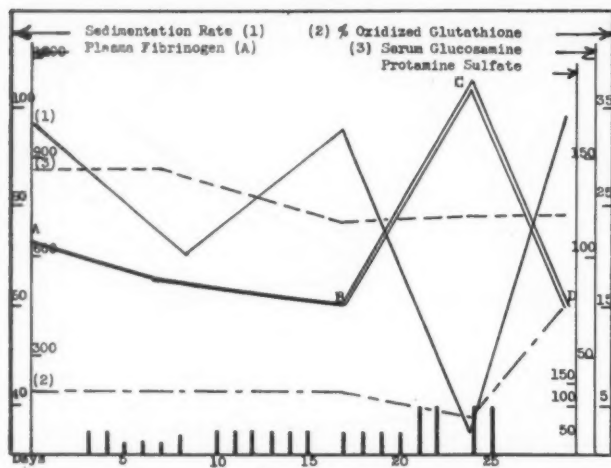


Fig. 4. Graph constructed from data obtained from chronic hypertrophic arthritis patient, not previously standardized on corticotropin, showing that exogenous corticotropin is not necessary for the protamine action.

of hypertrophic arthritis. Her headaches were completely relieved following the second injection of 200 mg. of Alpha Tocopherol, 25 mg. of testosterone propionate and .5 mg. of mixed natural estrogens all in oil. The protamine was started after the severe headaches had been relieved; otherwise the protamine might erroneously have been given credit for the dramatic relief of pain. A study of the data obtained in this case shows a clear correlation with the data obtained from the patients receiving corticotropin at the same time.

Discussion

Figure 5 is a composite graph constructed from data and information assembled from the entire group. It is presented for the purpose of more clearly visualizing the effect of protamine administration on the plasma fibrinogen, sedimentation rate, glucosamine and oxidized glutathione levels as observed in this study.

The solid black line from A to B represents the effect of protamine on the plasma fibrinogen level, which had been elevated supposedly by excessive heparin or heparin-like substances in the circulating blood of the arthritis patient. The double line continuation from B to C represents the effect of excessive protamine on the plasma fibrinogen level, after the circulating heparin or heparin-like substance has been neutralized. The double line

from C to D represents the fall in the plasma fibrinogen level when the protamine is discontinued. The solid black line represents, then, the plasma fibrinogen level which has been elevated

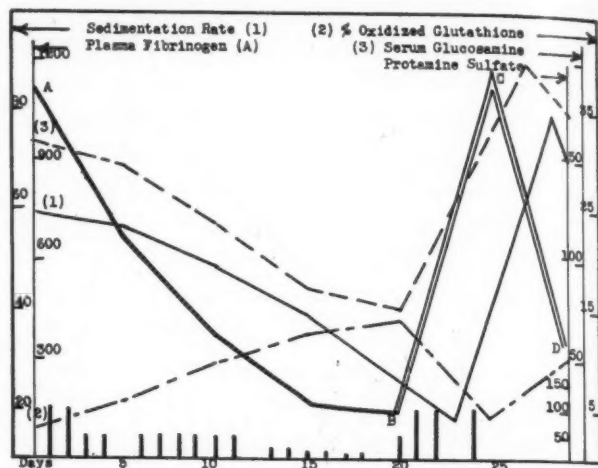


Fig. 5. Composite graph, constructed from segments of data from group studied, illustrating physiologic effect of protamine supplement in rheumatoid arthritis patients previously standardized on sustained corticotropin. The plasma fibrinogen (A B) drops presumably because of the neutralization of excess heparin or heparin-like substance in the circulation, requiring very small amount of protamine (10 to 30 mg. daily) to maintain the plasma fibrinogen at the normal level. If excess protamine is given when the plasma fibrinogen level is at or near normal (B) then the fibrinogen level rises sharply and may even exceed its original level (B C). The plasma fibrinogen level drops again when the protamine is discontinued (C D). The heavy line for A B illustrates that part of the curve during which presumably increased endogenous heparin or heparin-like substance is responsible for the increased plasma fibrinogen and the double line continuation B D illustrates that part of the curve during which exogenous protamine is responsible for the increased fibrinogen.

or maintained by heparin or heparin-like substance and the double line represents the plasma fibrinogen level which has been elevated by protamine.

This emphasizes the fact that both heparin or heparin-like substances and protamine neutralize thromboplastin, which, when reduced below a normal content, theoretically initiates a compensatory increase in the fibrinogen in an effort to maintain the life-preserving clotting qualities of the blood. The composite graph for the sedimentation rate, glucosamine levels and the percentage of oxidized glutathione are self-explanatory.

In order to better understand the correlation between the theory and the laboratory data obtained when sustained corticotropin therapy of chronic rheumatoid arthritis was supplemented with protamine sulfate, a review of the pertinent known facts about the principal substances and tests involved is very helpful.

Corticotropin.—First of all, corticotropin itself has been shown^{1,5} to produce a drop in the plasma fibrinogen level when the treatment is first started and the larger dosage is used. However, as the treatment is continued and the dosage is necessarily reduced the plasma fibrinogen seeks a higher level. Therefore, in order to distinguish between the fibrinogen drop produced by corticotropin and that produced by the protamine, the patients must necessarily be more or less standardized on one of the substances first before the other is used.

Protamine.—Protamine is a very complex protein-like substance occurring in combination with nucleic acid and obtained commercially from the sperm of salmon and other fish. Its therapeutic uses have been in the preparation of protamine zinc insulin and as an anticoagulant. For the latter use amounts up to 300 mg. per day have been given intravenously without any untoward results, and so one would not expect any harmful side effects from one fifth of that amount, which is all that is necessary to produce a good therapeutic result in conjunction with corticotropin.

Protamine is used as an anticoagulant because of its ability to neutralize thromboplastin. However, it has a stronger attraction for heparin which also neutralizes thromboplastin than for any other substance in the blood, and so for this reason it is used therapeutically to neutralize any overdosage of heparin when that substance is used as an anticoagulant. The powerful attraction protamine and heparin have for each other is said to be due to the fact that protamine carries the strongest positive electric charge and heparin carries the strongest negative charge of all biological substances known.

Heparin.—Heparin is a complex mucopolysaccharide resembling chondroitinsulfuric acid. Its powerful negative electric charge is in some way associated with its ability to prevent the action of thromboplastin on prothrombin to produce thrombin, and it may also inactivate thrombin itself. Heparin occurs in many organs, but especially in the liver and lungs. It greatly resembles, and may be identical with, the granular substance observed in the mast cells of Ehrlich, which occur mainly in fibrocytic nodules and in connective tissue in the walls of blood vessels and in the vicinity of capillaries.

Thromboplastin.—Thromboplastin is a phospholipoprotein, the exact chemical structure of which is still in dispute. Regardless of that, the substance is found in all body cells. It is especially abundant in brain, lung, thymus, testicular tissue and above all in blood platelets. It is released when the cell wall is broken by trauma or disintegration.

Fibrinogen.—Fibrinogen is a labile protein which is presumably formed in the liver. It is acted upon by an enzyme, thrombin, to produce fibrin which separates from the blood as a netlike gel in the process of blood coagulation. Expressed in its simplest terms, the clotting of blood takes place in two stages:

1. Prothrombin + thromboplastin + calcium \rightarrow thrombin.
2. Thrombin + fibrinogen \rightarrow fibrin.

When the plasma fibrinogen level is elevated, the plasma labile factor,¹⁰ which takes part in the conversion of prothrombin to thrombin, may be low. It is not yet determined which level is altered first.

Laboratory Data.—In addition to the usual clinical laboratory determinations, the serum glucosamine, plasma fibrinogen and blood glutathione studies were made a part of the routine, largely because of a desire to find useful correlates to the erythrocyte sedimentation rate as an index of disease activity. The erythrocyte sedimentation rate values have long been established by clinical experience as a useful index of rheumatic activity, and its discrepancies are widely recognized.⁹

The serum glucosamine values are also nonspecific for rheumatic disease and are usually found elevated in inflammatory processes and malignant tumors. In the main the serum glucosamine values parallel those for the sedimentation rate in rheumatic disease with frequent variations and discrepancies. A study of the data chart shows that the discrepancies in relation to the clinical condition of the patient do not always occur simultaneously, and when both indices are used in the evaluation of the patient the misleading effects of the sedimentation rates values, when used alone, are reduced by about one half. The serum glucosamine values, while not always reliable, appear to be quite useful as a correlate of disease activity in conjunction with the time honored sedimentation rate values.

The percentages of oxidized glutathione holds some promise of being a useful index, although its implications are far more general than the sedimentation rate and the glucosamine levels. Further study will need to be done before any reliable conclusions may be drawn.

Elevation of the plasma fibrinogen level has been a constant finding in active rheumatic disease. Fearnley³ and Ogryzlo⁶ independently observed that the plasma fibrinogen levels closely paralleled the sedimentation rate values during the rapid changes produced by corticotropin.

Using a 12.5 per cent sulphite precipitation technique, Fletcher, Kelly and Dauphinee, as quoted by Ogryzlo,⁶ found that a plasma fibrinogen level of 200 mg. per cent was usually associated with a normal sedimentation rate in over 100 patients with rheumatoid arthritis. With higher levels of plasma fibrinogen, there was a corresponding increase in the sedimentation rate until the fibrinogen level reached 700 mg. per cent. Beyond this figure, the sedimentation rate values did not continue to follow the higher fibrinogen levels.

Comments

A great deal more data is desirable in order to properly evaluate the use of protamine supplement in corticotropin therapy. However, it does appear certain that corticotropin alone will not adequately control the manifestations of chronic rheumatoid arthritis, although its use does produce a very well worthwhile benefit. The results of this study so far shows there is a good likelihood that supplementary substances may be found which when used judiciously in their proper places, along with corticotropin, will maintain the rheumatoid arthritis patient in a remission which can be confirmed by several different laboratory indices.

Regardless of whether or not protamine therapy eventually proves to be of any long term benefit to the arthritis patient, the study of its effects on plasma fibrinogen opens up a very fruitful field for arthritis research. Changes in plasma fibrinogen are closely associated with all forms of rheumatic disease and a persistent and widespread inquiry into these changes might reveal something of the actual mechanism producing the disease.

Summary

A series of twenty-six chronic arthritis patients, mostly rheumatoid, were given sustained corti-

cotropin therapy up to the point of cortical overstimulation for a period of eight to fifty-four weeks. Worthwhile improvement was experienced in all cases although none developed a complete clinical remission.

All twenty-six patients had a persistent increase in their plasma fibrinogen level. This was postulated to be due to a compensatory increase in fibrinogen because of a decrease in thromboplastin, which was brought about by an oversupply of heparin or heparin like substances in the circulating blood.

After the patients had been standardized on corticotropin therapy, and it appeared certain that a further drop in their plasma fibrinogen level would not occur from corticotropin, protamine supplementary therapy was instituted with good clinical results.

The plasma fibrinogen level in all cases began to drop to normal, but when the protamine therapy was increased beyond the point of ideal maintenance, the plasma fibrinogen, sedimentation rate and the serum glucosamine curves all reversed and rose to new highs, only to drop again when the protamine was discontinued. This was in complete accord with the theoretical expectations.

The supplementary protamine therapy enhanced the partial clinical remission started by corticotropin in twenty-one of the twenty-six cases.

Conclusion

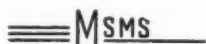
1. Corticotropin by itself is inadequate for the complete control of chronic arthritis.
2. Protamine sulfate therapy in conjunction with corticotropin may complete the clinical remission started by the corticotropin and this may be substantiated by laboratory data.
3. The increased plasma fibrinogen levels found in association with rheumatic disease may be reduced to and maintained at normal by corticotropin and protamine therapy.
4. The determination of the serum glucosamine and the plasma fibrinogen levels along with the erythrocyte sedimentation rate are useful correlates of rheumatic disease activity.

Acknowledgment

Grateful acknowledgment is made to Donald H. Kaump, M.D., for his valuable counsel and to Ruth Davis McNair, Ph.D., for her valuable technical assistance, and also to the entire technical staff for their sympathetic and helpful co-operation.

References

1. Bernfeld, P.; Bonner, C. D., and Hamburger, F.: ACTH and plasma proteins. Proceedings of the Second ACTH Clinical Conference. Edited by John R. Mote, M.D. Vol. I, p. 282-289. Philadelphia: The Blakiston Company, 1951.
2. Conn, J. W., et al: Alleviation of experimental diabetes in man by administration of reduced glutathione: metabolic implications. *Science*, 109:279, 1949.
3. Fearnley, George: Discussion on presentation by W. D. Robinson et al: Proceedings of the second ACTH Clinical Conference. Edited by John R. Mote, M.D. Vol. II, p. 561. Philadelphia: The Blakiston Company, 1951.
4. Holbrook, W. P.; Hill, D. F.; Stephens, C. A. L., and Johnson, R. B.: Long term ACTH administration in rheumatoid arthritis. Proceedings of the Second Clinical ACTH Conference. Edited by John R. Mote, M.D. Vol. II, p. 599. Philadelphia: The Blakiston Company, 1951.
5. Jager, B. V.; Brown, H., and Nickerson, M.: Alterations in plasma proteins, plasma volume and volume of packed cells in patients receiving ACTH or cortisone. *J. Lab. & Clin. Med.*, 37:431-443 (March) 1951.
6. Ogryzlo, M. A.: Discussion on presentation by Robinson et al: Proceedings of the Second ACTH Clinical Conference. Edited by John R. Mote, M.D. Vol. II, p. 565. Philadelphia: The Blakiston Company, 1951.
7. Peterman, E. A.: Sustained pituitary adrenocorticotrophic hormone (ACTH). *J. Michigan M. Soc.*, 50:1010 (Sept.) 1951.
8. Ratnoff, O. D., and Menzie, A. B.: A new method for the determination of fibrinogen in small samples of plasma. *J. Lab. & Clin. Med.*, 37:316 (Feb.) 1951.
9. Robinson, W. D.; Wolfson, W. Q., and Duff, I. F.: The significance of sedimentation rate changes during ACTH therapy: Proceedings of the Second Clinical ACTH Conference. Edited by John R. Mote, M.D. Vol. II, p. 549. Philadelphia: The Blakiston Company, 1951.
10. Stefanini, M.: New one-stage procedure for quantitative determination of prothrombin and labile factor. *Am. J. Clin. Path.*, 20:233-240 (March) 1950.
11. West, R., and Clarke, D. H.: The concentration of glucosamine in normal and pathological sera. *J. Clin. Investigation*, 17:173 (Jan.) 1938.
12. Westergren, Alf: Studies of the suspension stability of the blood in pulmonary tuberculosis. *Acta med. Scandinav.*, 54:247-282, 1921.
13. Woodward, G., and Fry, E.: The determination of blood glutathione. *J. Biol. Chem.*, 97:465, (Aug.) 1932.



BASEBALL AND POLITICS

Although baseball is a more popular game than politics, it is not nearly as remunerative for those who participate in it. The mink coat is not a baseball symbol. The average pay of the 400 players in the big leagues is \$13,842 or \$1,158 less than that of a congressman. Moreover, none of a ballplayer's salary is tax-exempt and \$2,500 of the congressman's is. Then, too, it is a lot harder to stay in the big leagues than in congress, and no ballplayer can put his wife on the team payroll as a secretary. Finally, it isn't only a question of what you get but how long you get it. Some men have played at being congressmen until past 80, but only the rare exception like Cy Young and Satchel Paige plays ball after forty.

The Intra-articular Injection of Hydrocortisone (Compound F) in the Treatment of Selected Cases of Arthritic Diseases

By Hugo A. Freund, A.B., M.D.
Detroit, Michigan

IT IS GENERALLY accepted that with the exception of monoarticular infections and traumatic conditions, arthritides should be classified as systemic diseases. Morphologic evidence of this is found in frequent observations describing inflammatory lesions in heart, muscles, and nerves, as well as biochemical changes in body fluids.

Although periods of remission and even reversal of arthritic diseases are sometimes observed, the tendency is a progressive course that sooner or later leads to marked disabilities and invalidism.

The advent of ACTH, cortisone and hydrocortisone² has, under controlled guidance, provided spectacular relief in some cases, partial improvement in many, and no change whatsoever in a few. Restoration of synovia, cartilages, and atrophic muscles has not been accomplished, although disappearance of joint inflammation, diminution of pannus, and improvement in mobility and general well-being may be accomplished. Much remains to be desired.

Although improvement in many cases, especially early ones, is general, often individual joints continue to handicap and create the only obstacle to a greater degree of usefulness. This is especially seen in rheumatoid arthritis where, after careful management, an ankle, knee, wrist, or elbow do not improve sufficiently to restore a desired amount of function. It is in these instances that hydrocortisone has been of value.

Hollander¹ gives an excellent summary of the usefulness of the substance when injected directly into the diseased joint. It should not be assumed however that this procedure gives relief in every instance.

It has become increasingly apparent that some

These clinical studies were supported in part by funds from the National Foundation of Rochester, Michigan. Hydrocortisone was generously supplied by Merck and Co. of Rahway, New Jersey.

rheumatoid joints will respond favorably; in others no attempt should be made. Those in which a satisfactory response may be predicted are the acutely inflamed joints, and those containing some free fluid. Where ankylosis or fibrous changes are evident, little improvement can be expected. This applies also to those joints heavily infiltrated with thick pannus that has not diminished much during the previous course of systemic treatment. Occasionally, a joint that has improved sufficiently to permit introduction of a needle may be x-rayed after oxygen injection, to determine the amount of adhesions and space occlusion. In two such instances, 50 mg. of hydrocortisone resulted in a moderate degree of improvement. As a rule, however, when no fluid is recovered after the needle is in the joint space, no striking benefit results. In general, less satisfactory improvement results from instillation of hydrocortisone into phalangeal joints than into the larger joints.

One of the striking benefits of this method of administration is seen in acute exacerbations of gout. Two cases in point, are the following:

Case 1.—J. P., aged forty-six, has had a hyperuricuria for eight years. During this time, he has had several acute attacks in the right great toe. Patient was hospitalized because of an attack of coronary thrombosis. He made an uneventful recovery, except for the fact that on the twenty-sixth day of his hospitalization he developed an acute episode of pain, redness, tenderness and swelling characteristic of a typical attack of gout. At 6:00 in the evening, 25 mg. of hydrocortisone was injected into the joint. The patient states that at midnight the pain was gone. At 8:00 the following morning no evidence of the acute attack could be seen.

Case 2.—E. H., aged forty-eight, has had recurrent attacks of acute gout for several years. These always incapacitated him from three to five days. Colchicine usually gave him relief. The patient was placed on Benamid and had been on it for one month, during which time he spent his vacation in Florida. He was called home suddenly and proceeded to drive the distance. After driving continuously for seventeen hours, his right foot suddenly swelled with continuous intense pain, characteristic of the usual gouty seizure. He immediately began colchicine, and at the time he arrived in Detroit, forty hours after leaving Florida, the right great toe and foot were badly swollen, red, and exquisitely painful. He had a temperature of 101°. Apparently colchicine had given no relief up to this point. Hydrocortisone, 50 mg. in two separate injections, was given. In twenty-four hours, the attack had completely subsided. Meantime, colchicine had been discontinued.

In gout, the acute episode is completely aborted by hydrocortisone. No further treatment has been required in six cases observed up to this time. In all of these cases, it should be mentioned that the blood uric acid did not fall following the injection of the hydrocortisone. This probably is because its action is anti-inflammatory and anti-allergic, in addition to a gradual deterrent effect on the formation of fibroblastic tissue.

The technique of injection is simple. The point selected is where the maximum amount of fluctuation can be elicited after active flexion. With a small hypodermic needle, the area is anesthetized with 2 per cent procaine. Then 50 mg. of hydrocortisone is made ready in a 2 cc. syringe. First, a No. 20 needle on a 10 cc. syringe is introduced into the joint space, and an attempt to withdraw fluid (as much as possible, if obtained) is made. The 2 cc. syringe is then attached, and the hydrocortisone injected very slowly: 50 mg. for the larger joints, and at least 25 mg. for smaller ones. No after care is required. If a favorable result is not obtained at the first injection, subsequent ones rarely give much more relief, although there is no contraindication to repeat the instillation after several days.

Favorable results following treatment of every type of acutely inflamed joints, bursitis and a variety of non-arthritis states are being reported in current literature. All of these support the general clinical experience of the value of this form of intra-articular therapy.

Summary

Acutely inflamed joints and carefully selected chronic joints in rheumatoid arthritis that have improved on systemic treatment, and acute joint involvement in gout, respond satisfactorily and oftentimes dramatically to intra-articular injections of hydrocortisone.

62 Kirby Avenue West

References

1. Hollander, Joseph L.: Bulletin on Rheumatic Diseases, 2: No. 2 (Oct.) 1951.
2. New chemicals and specialties. Chem. & Engin. News, 30:461 (Feb.) 1952.

MSMS

Negative bronchoscopic examinations, regardless of number, do not disprove the presence of cancer.

Negative cytologic examinations do not disprove the presence of cancer.

The Conservative Management of Chronic Recurrent Low Back Pain

By Charles H. Frantz, M.D.

Grand Rapids, Michigan

DURING THE LAST twenty years, clinicians, physiologists and psychologists have contributed much to our knowledge concerning the nature of low back pain. There continues to be a lack of information, which were it known, might answer many of the problems we are not at present able to solve.

Approaching the chronic low back pain problem from a conservative standpoint, it is well to remember that all parts of the body are subject to variations in structure and development. This is particularly true of the lumbosacral joint. There are so many variations at this level that we sometimes wonder what is normal. These variations are probably due in part to the fact that the lumbosacral level is the last portion of the vertebral column to become segmented, chondrified and ossified.

It has been stated that between 25 per cent and 30 per cent of people complaining of low back pain demonstrate skeletal abnormalities at the lumbosacral level. It has also been the observation of clinicians, in reviewing large series of cases, that 30 per cent of people with back pain are suffering from some degree of disc degeneration.

In view of these observations, it would seem that a goodly proportion of cases cannot be attributed to environmental trauma. Contrarily, the physician is faced with degenerative processes within the disc wherein extrinsic trauma is incidental. Practitioners are integrated to accept without question the demonstrative changes at the sacro-iliac joint attributed to rheumatoid arthritis. The proliferative subchondral bone changes in vertebral bodies and facets are evidences of wear and tear. Demonstrated in the roentgenogram, they are immediately recognized as hypertrophic or degenerative arthritic changes. The intervertebral



—From *Journal of Bone and Joint Surgery*
Fig. 1.

disc also undergoes degeneration with definite sequelae.

The lumbosacral disc is subject to more trauma, both acute and chronic, than any segment above it. This trauma is not only extrinsic (environmental accidents) but also is intrinsic or physiological due to the demands of everyday living. Its vulnerability is due to the fact that this joint is in more lordosis than any segment above it and carries a greater load. The lumbosacral disc is found to be narrowed more frequently than its higher brethren. Man assumed the upright or orthograde position at the expense of this joint, and it is felt by anthropologists that the lumbosacral level has been and is continuing to undergo transitional changes. This contention may in part explain the frequency of skeletal abnormalities as revealed by roentgen examination.

Despite progress in understanding low back pain, no one to date is able to solve satisfactorily all of the perplexing clinical problems. Many entities have held the limelight. Gynecological conditions, sacro-iliac subluxation, spastic piriformis muscle, fascitis, hypertrophic ligamentum flavum, fascial contractures, to name but a few, have been overemphasized and gradually settled back to their proper places. There continues to be cases which confound us. There is myriad of causes for back pain, and we must constantly think of systemic disease, local inflammatory processes and neoplasm.

From a clinical standpoint, gynecological conditions in the female and genitourinary conditions in the male are seldom the cause of backache. If there is backache, other symptomatology and a

Read at the Michigan Clinical Institute, Detroit, Michigan, March 13, 1952.

From Blodgett Memorial Hospital, Grand Rapids, Michigan.



Fig. 2. Sclerosis of the right sacro-iliac joint.



Fig. 3. Unilateral sacralization of the fifth lumbar transverse process; pseudo-arthritis, producing pain.

careful examination will lead away from the vertebral column.

Confronted with a patient complaining of low back pain, one is obligated to evaluate carefully the type of person complaining of the pain as well as to endeavor to determine the nature and location of the pain.

The examination is designed to arrive objectively at the correct diagnosis. If the story evolves in "injury on the job," with implications of liability and compensation, particular attention should be focused on the exciting episode and a detailed record made.

Is there a hollow or flat back? Is spasm present? Is forward bend limited? How much? Is recovery to the erect difficult or painful? Where is the pain? Localize it. Does hypertension aggravate it? Are the knees flexed during the back maneuvers? Are lateral bending motions painful and limited? Is trunk torsion painful? Is there tenderness in the sciatic notch? Is there atrophy of the thigh and calf musculature? Are the straight leg-raising maneuvers painful? Is this pain sciatic neuralgia or hamstring tension? Are the reflexes present at the knee and heel? Are the dorsiflexors of the foot and great toe weakened? Complaints of tingling and numbness must be verified by touch and pin prick tests. Leg length equality must be verified. Positive findings can only be observed

with the patient disrobed. Roentgen examination should include anteroposterior, right and left oblique projections plus a true lateral view.

The major sensory components of the sciatic nerve arise from the fourth and fifth lumbar nerves, and the first sacral nerve (Fig. 1). Their dermatome pattern is a familiar one. These major components supply touch, pain and temperature fibres to their respective skin areas. Fibres also present are concerned with position sense and a sense of pressure to muscle and tendon groups. These nerves also send branches to the ligaments and capsule of the small joints of the foot, the ankle, knee and sacroiliac joints. They also supply the posterior joints, annulus fibrosa and adjacent ligaments of the lower lumbar vertebrae. It is noteworthy here that these major components of the sciatic nerve supply few or no pain fibres to the abdominal and pelvic viscera.

Sacroiliac arthritis (Fig. 2) produces low back pain. In the presence of these localized changes it is well to examine carefully the movements of the entire spine, major extremity joints and the chest expansion. One may be dealing with an early rheumatoid spondylitis. A firm bed, local application of heat, x-ray irradiation, salicylates and a spinal support aid in relieving symptoms.

Partial sacralization of the fifth lumbar transverse process (butterfly type) is not an uncommon

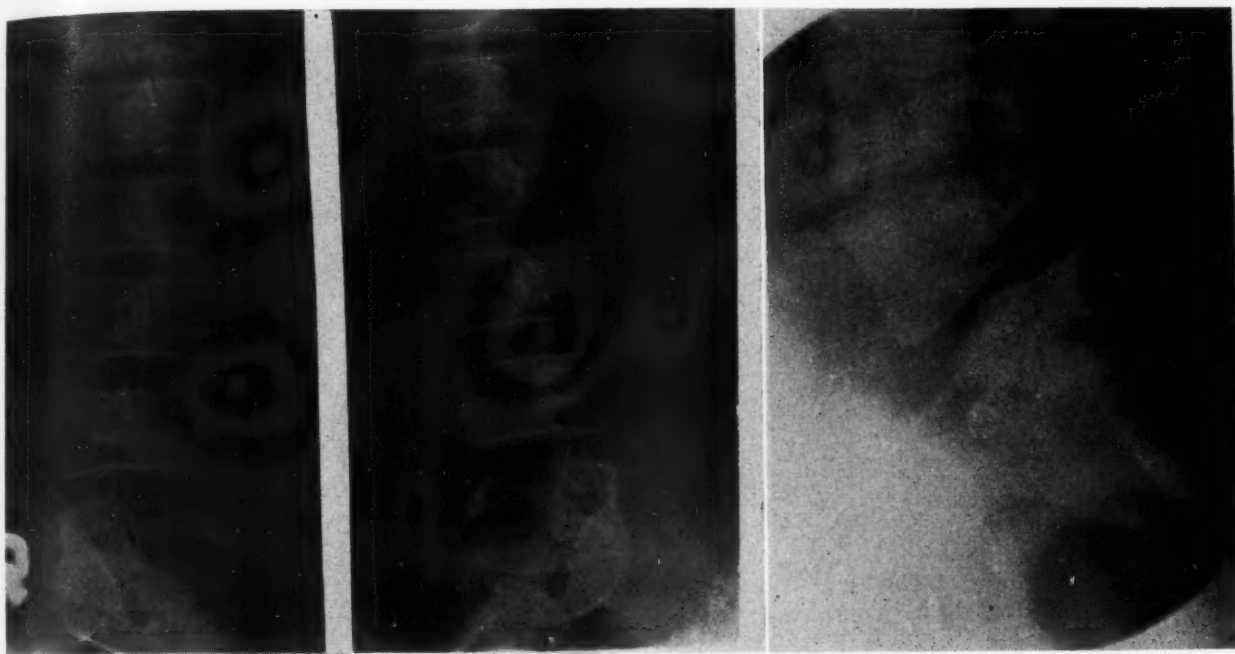


Fig. 4. Spondylolysis of the fifth lumbar posterior elements in a young person.

Fig. 5. Spondylolisthesis, second degree.

cause of low back pain. Pseudo-arthritis exists and the pain is usually on the side of the abnormality. Most cases can be relieved by observing work habits carefully, a firm bed, heat in acute attacks and a spinal support. The frequency and severity of attacks are only partial indications for surgical intervention (Fig. 3).

Hypertrophic degenerative changes in the older age group not infrequently cause backache. There is loss of motion in the lumbar, if not the entire, spine. Discomfort may be diffused with few localizing areas. Again, a firm bed is helpful. Local applications of heat, a spinal support and salicylates relieve the patient to a great degree. Senile or post-menopausal osteoporosis may be present in these patients. In such cases, in addition to general supportive measures, urinary calcium excretion tests may serve as a guide to the judicious use of steroid hormones. However, careful periodic re-examinations are most necessary to combat side effects of these hormones.

Defects in the posterior elements of the fifth lumbar vertebra give rise to low back pain on exertion (Fig. 4). Proper postural training and working habits will in many cases alleviate symptoms. In the presence of spondylolisthesis (Fig. 5) the working capacity of an individual may be markedly reduced. Such a problem may be met with spinal support, proper sitting, lifting and

recreational precautions. A spinal support in the form of a chair back brace or spinal corset may be necessary. The severity of symptomatology will determine necessity of surgical fusion.

Narrowing of the lumbosacral intervertebral disc with its sequelae of facet over-riding and degenerative changes may in numerous instances be handled conservatively (Fig. 6). The settling of the fifth lumbar facets downward encroaches on the fifth lumbar nerve root by decreasing the size of the foramen of exit. The lower lumbar nerve roots are covered by a dural prolongation and have little if any latitude of motion. During leg maneuvers, the lumbar roots are drawn distally and are under tension. Any decrease in the size of the foramen, hypertrophic changes in the facets or disc protrusion will contribute to discomfort, as the hip is flexed with a straight knee.

One will over a period of years be confronted with various degrees of degeneration (Fig. 7). At times it is difficult to understand the adaptation to slowly progressive degeneration, producing comparatively mild symptomatology.

The mechanism of many of these problems is due to the load placed upon the erector spinae as it gains the upright position from forward bend. This massive anti-gravity muscle contracts in its long axis, aided by the glutei and hamstrings. Its contraction compresses the posterior elements of

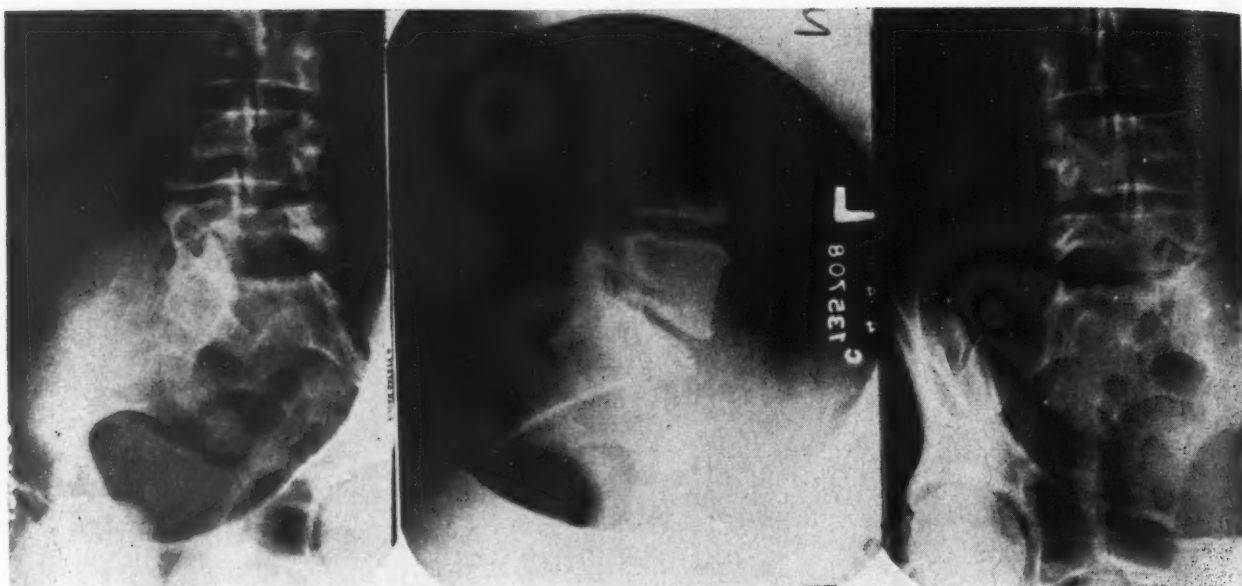


Fig. 6. Reduction of lumbosacral joint space. Facet overriding.



Fig. 7. Complete degeneration of lumbosacral disc.

the lower lumbar vertebrae with the maximum compressive force on the facets of the fifth lumbar vertebra and the first sacral segment.

The kinesiology is briefly illustrated in Figure 8. The pelvis rotates on the axis of the hip joints. The sacrospinalis maintains the vertebral column in the erect position by extending the lumbar spine. It is aided by the hip flexor group which from a fixed point in the low thigh and distal insertion, pulls downward from the anterior superior spine,

tending to produce lordosis. Thus, the sacrospinalis and hip flexors are synergistic in producing lordosis.

The gluteus maximus from its insertion into the fascia lata and gluteal tuberosity tends to flex the lumbar spine by pulling downwards. The rectus abdominus aids this rotation by pulling the symphysis pubis upwards; thus, the gluteus maximus and rectus abdominus correct lordosis. A flexed lumbar spine with good abdominal tone and strong glutei tend for good posture. Most adults in our present-day life will demonstrate an overdeveloped erector spinae, a relaxed abdomen and atrophied gluteal muscles.

A patient with severe muscle spasm should be put to bed. On the back, the erector spinae is in the position of rest. The bed must be firm to support the lower trunk and back. The knees are flexed. This is easily accomplished in the conventional hospital bed. In the home, boards placed longitudinally between the mattress and springs will serve well. Plywood is commonly used. Knee flexion may be accomplished by rolling two or three pillows firmly in a blanket, or utilizing a dresser drawer between the mattress and spring at knee level.

Sedatives and antispasmodics may be given freely. Local heat in the form of lamps, heating pad or moist hot packs aid in relieving pain and spasm. If physical therapy is available, one may hasten recovery from an acute bout of pain and spasm by the addition of massage.

When stretching in each relaxed, the

w
co
fo
th
h
p
a

CHRONIC RECURRENT LOW BACK PAIN—FRANTZ

When pain has decreased, the patient may begin stretching the sacrospinalis by grasping the knees in each hand; keeping the head and shoulders relaxed, the knees are gently and slowly pulled to-

abdomen do well with a firm canvas corset with paraspinal struts and an uplifting abdominal binder. Resistant cases, or those seen for the first time with a history of long duration and no specific

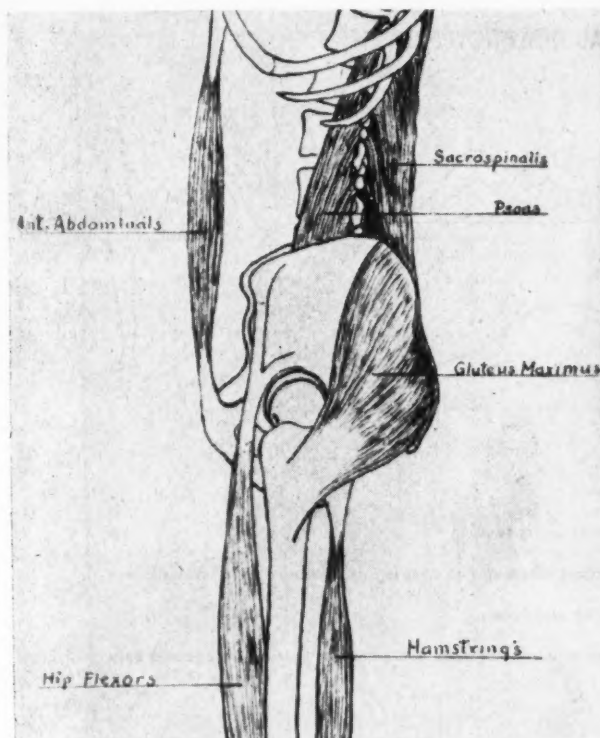


Fig. 8. Schematic drawing of muscles controlling posture.

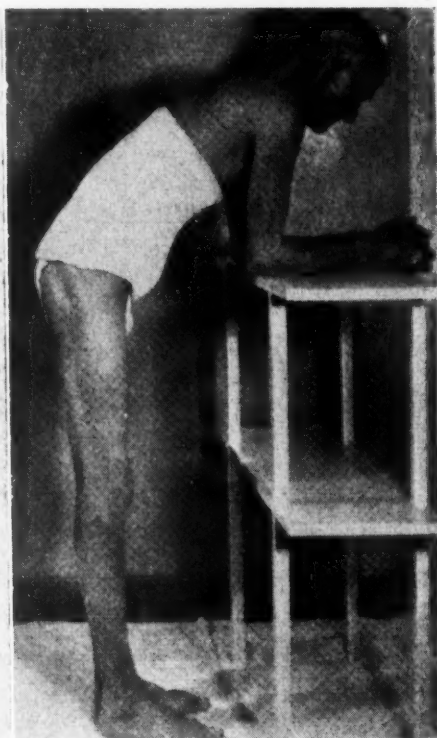


Fig. 9. Note arching of low back. Elbows at level of umbilicus.

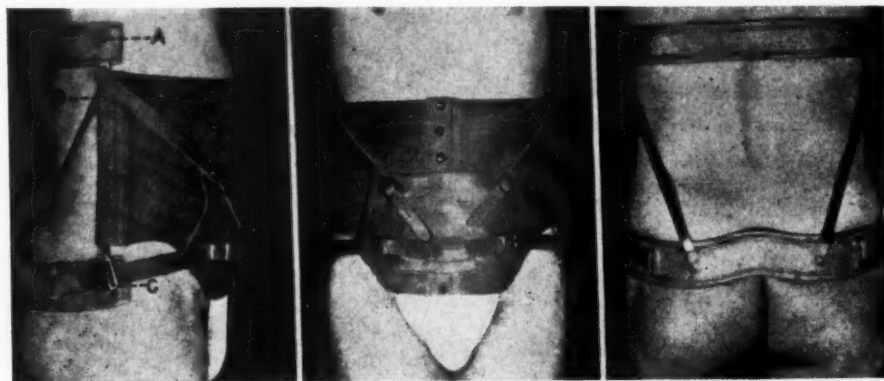


Fig. 10. Williams' lordosis brace. The brace is hinged at B, tightens at C to correct lordosis. It is stabilized against the rib cage at A.

wards the axillae, flexing the lumbar spine. As comfort allows, this maneuver can be practiced four or five times each hour, gradually increasing the latitude of flexion. When the patient is ambulant, he is instructed in selective exercises and postural correction.

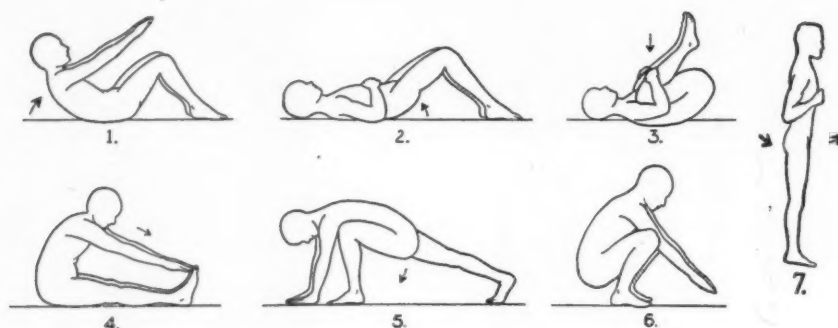
The various spinal supports may be prescribed as seem necessary. Obese women with a redundant

program, may do well in a plaster of Paris standing flexion cast (Fig. 9). The patient stands with the elbows resting on an appropriate support. The abdomen is retracted and the lumbar spine flexed. The plaster is applied from the third sacral level to approximately the eighth rib. It is well molded about the iliac crests. On assuming the upright position, the buttocks are forced under the lumbar

spine, decreasing lordosis. Cut away the lower anterior portion of plaster to enable the patient to pursue his prescribed exercises. The cast may be bivalved at the end of the six or eight weeks. He may gradually divorce himself from this support

Therapy Departments to give the patient an exercise and instruction sheet (Figs. 11 and 12). Figure drawings and precautions are well received and seem to stimulate patients to follow the "prescription."

POSTURAL INSTRUCTIONS



Exercises should be taken on a padded floor.

Exercise 4 should be omitted unless otherwise instructed.

Start exercises by doing each one _____ times morning and evening, increasing the series one a day until you are doing each one _____ times morning and evening.

Exercises are essential in obtaining a proper muscular balance but a correct posture is acquired only through conscious effort.

Remember—

1. When standing or walking, toe straight ahead and take most of your weight on heels.
2. Try to form a crease across the upper abdomen by holding the chest up and forward and elevating the front of the pelvis.
3. Avoid high heels as much as possible.
4. Sit with the buttocks "tucked under" so that the hollow in the low back is eradicated.
5. When possible, elevate the knees higher than the hips while sitting. This is especially important when driving (driver's seat forward) or riding as a passenger in an automobile.
6. Sleep on your back with knees propped up or on your side with one or both knees drawn up. Bed should be firm.
7. Do not lift loads in front of you above the waist line.
8. Never bend backwards.
9. Do not bend forward with knees straight. Always "squat."
10. Avoid standing as much as possible.

Learn to Live 24 Hours a Day Without a Hollow in the Lower Part of Your Back
(Over) (after Williams)

Fig. 11. Face of exercise sheet.

and continue exercises.

Patients over forty-five years of age may need a permanent support. The Williams' lordosis brace will aid in affording support and limiting motion (Fig. 10).

It has been the practice of the group at Blodgett Memorial Hospital in the Orthopedic and Physical

The figures on the postural and instruction sheet are designed for specific muscle stretching and building. Exercise 1, back lying with the knees flexed, is designed to tone the rectus abdominis. Exercise 2, lying on the floor with the knees flexed, then raising the buttocks and keeping the lumbar spine flat, thus rolling the pelvis, develops the

CHRONIC RECURRENT LOW BACK PAIN—FRANTZ

glutei. Exercise 3, back lying knee axillary flexion, is designed to stretch the sacrospinalis and roll the lumbar spine into flexion. Exercise 4 is designed for hamstring stretching. Exercise 5 is designed to

medicine to offer as complete a conservative program as possible and "carefully" evaluate the patient as well as his back before considering him a surgical candidate.

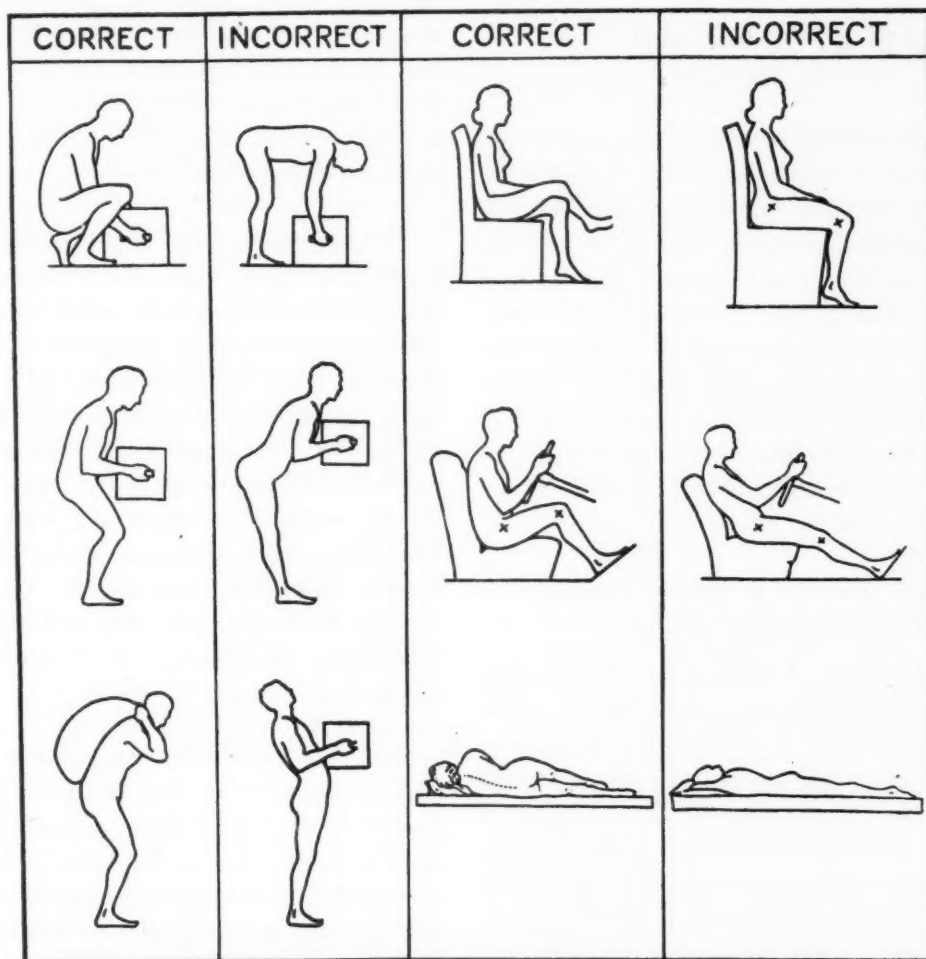


Fig. 12. Reverse face of exercise sheet.

stretch the hip flexors. Exercise 6, squatting exercise, is designed to roll and flex the lumbar spine. Exercise 7 is the standing pelvic roll, wherein the patient retracts the abdomen, contracts the glutei and the rectus abdominis, rolls the pelvis into lumbar flexion and puts the buttocks up and under.

Conclusion

There is universal interest in low back pain problems. The principles of "rest, heat, and immobilization, followed by postural rehabilitation" are the essentials of a conservative regime. Probably some of us are remiss in failing to instruct patients properly in postural precautions and protective habits. The results of surgical procedures in large series of cases fall significantly short of the 100 per cent cure figure. It behooves us as practitioners of

Bibliography

1. Badgley, Carl E.: Clinical and roentgenographic study of low back pain with sciatic radiation. A clinical aspect. *Am. J. Roentgenol.*, 37:454, 1937.
2. Badgley, Carl E.: The articular facets in relation to low back pain and sciatic radiation. *J. Bone & Joint Surg.*, 23:481-496 (April) 1941.
3. Barr, J. S.: Low back and sciatic pain. *J. Bone & Joint Surg.*, 33A:633-649 (July) 1951.
4. Key, J. Albert: The conservative treatment of low back pain. American Academy of Orthopedic Surgeons Instructional Course. Lectures, vol. VI, p. 39-41. Ann Arbor: Edwards Bros., 1949.
5. Williams, P.: Personal communication.
6. Williams, Paul: Lesions of lumbosacral spine. Acute traumatic destruction of lumbosacral intervertebral disc. *J. Bone & Joint Surg.*, 19:343-363 (April) 1937.
7. Williams, Paul: Lesions of lumbosacral spine. Chronic, traumatic or postural destruction of intervertebral disc. *J. Bone & Joint Surg.*, 19:690-703 (July) 1937.
8. Willis, T. A.: Anatomical variations and roentgenographic appearance of the low back in relation to sciatic pain. *J. Bone & Joint Surg.*, 23:410-416 (April) 1941.

Problems Relating to the Structure and Function of Joints

By Ernest Gardner, M.D.
Detroit, Michigan

THE INCREASING interest in rheumatic disorders has been accompanied by a similar expansion of interest in the physiology of connective tissue. Experimental studies of this tissue have for the most part been carried out in the basic science fields, and it is only within recent years that there have been any serious attempts to correlate this work with knowledge derived from the clinical fields. The pertinent literature, particularly that which deals with joints, has been covered in recent reviews^{1,2,4,5,6} and no attempt will be made to duplicate it in the present paper.

Mechanical Features of Freely Movable Or Diarthrodial Joints

The main function of joints is so obvious that it is usually taken for granted and, indeed, often forgotten. Joints make it possible for muscles to translate their work into movement. Joints are the bearings and the transmissions of the living body. As such, they are particularly remarkable because the bearing and moving surfaces, made up mainly of articular cartilage, cannot be replaced to any significant extent in the adult and yet they can last for decades, or even a century. This does not mean that they show no wear. They do, because just like any moving mechanical system, joints are subject to friction and other forms of trauma. The resulting changes create difficulties which constitute a field of particular clinical importance. In order to illustrate this, it is necessary to discuss in some detail certain features of normal movement in joints.

Movement and Hydrodynamic Lubrication.—The articular surfaces of most joints are ordinarily considered to be closely fitting, particularly in the case of the so-called ball and socket joints. Actually, this is not the case, as even the most casual observation will demonstrate. It has been known

for many years that joint surfaces are incongruous. The head of the femur, for example, does not fit the acetabulum perfectly. The condyles of the femur have quite different curvatures than do the condyles of the tibia. A model of a joint constructed so as to have perfectly fitting surfaces is not an accurate representation of that joint. This incongruity is of considerable importance in the normal functioning of a joint, particularly in hydrodynamic lubrication.^{13,14}

Hydrodynamic Lubrication.—This is lubrication between moving surfaces, as distinguished from hydrostatic lubrication in which the surfaces are relatively at rest. The efficiency of any lubricant depends upon its ability to minimize friction. Hydrodynamic lubrication does this by shifting the effects of friction from bearing surfaces to lubricating fluid. In living joints it also provides a mechanism for supporting weight and transmitting force. Hydrodynamic lubrication is most efficient when certain conditions are fulfilled. These conditions are (1) incongruous bearing surfaces, (2) viscous lubricating fluid, and (3) a relative speed of surfaces.

1. If two plane surfaces, parallel to each other and separated by a film of lubricating fluid, are pushed toward each other, any resistance encountered is due to the fact that fluid is incompressible. A counter pressure actually develops, that is, a pressure which acts perpendicular to the surfaces and in a direction opposing the push. If one of the two surfaces is moved in a direction parallel to the other one, any existing perpendicular pressure is the result of gravity acting upon the upper surface. In addition, the lubricating fluid tends to be "pulled" or "dragged along" with the moving surface. This is because the fluid next to the moving surface actually sticks to that surface and therefore moves along with it, while the fluid next to the fixed surface sticks to it and therefore remains stationary. There is, therefore, a continuous gradation in rates of movement within the lubricant. One can express the result by saying that layers of lubricant are moving against each other so that friction acts against them rather than against the bearing surfaces. In the example cited, however, the perpendicular pressures are equally distributed throughout the lubricant and the mere weight of the upper surface tends to force fluid from between them. As a result, this

Aided by a grant from the Michigan Chapter of the Arthritis and Rheumatism Foundation.

Dr. Gardner is Professor of Anatomy and Chairman of the Department, Wayne University College of Medicine, Detroit, Michigan.

type of moving system is liable to "seizing" or "binding" as the bearing surfaces come in contact. Suppose, however, that the upper surface is so inclined that its trailing end is closer to the lower surface. This forms a wedge-shaped space filled with the lubricant. As the upper surface moves, lubricant is forced from the large part of the wedge back through the narrow part or apex. Since fluid is incompressible, a volume of fluid filling a large space cannot enter a smaller space without having an accompanying increase in pressure and rate of flow. The net result is that a very large counter-pressure appears at the apex of the wedge-shaped space. It is a pressure sufficient to support weight and resist thrust. The curvatures of the articular surfaces of practically all diarthrodial joints are such that, during movement, the surfaces are in potential contact at but one point. Here they are quite close to each other, perhaps but a fraction of a millimeter apart, but nevertheless still completely separated by a film of synovial fluid. Elsewhere the surfaces are more widely separated. Thus the incongruity of articular surfaces actually provides the physical conditions necessary for the formation of wedge-shaped spaces in which, during movement, counter-pressures can develop. The mechanism is so efficient that very thin films of synovial fluid may resist loads up to 900 pounds per square inch.^{11,12}

2. The more viscous a lubricating fluid, the greater is its ability to resist shearing forces. Normal synovial fluid is quite viscous, and it therefore fulfills the second of the conditions.

3. The third condition has to do with the rate of movement of a joint. When a joint is at rest, articular surfaces are actually in contact with one another so that when movement begins there is, for a short time, an actual rubbing of articular cartilages against each other. Provided the rate of movement reaches a certain critical value, hydrodynamic forces develop, counter-pressures appear and the articular surfaces become completely separated by a thin film of synovial fluid. Friction is minimal during this phase and is taken up mainly by synovial fluid. Comparable changes occur in the reverse order as movement slows down.

It is thus apparent that joints are extremely complex and that they are ideally constructed so as to minimize friction and at the same time support weight and transmit force.

Practical Considerations.—Unless one assumes that joints are immune to the laws of friction, there must be some wear and tear in joints, even during normal activity. Such wear and tear, or use destruction, has been known for many years and has been described in detail, as, for example, by Meyer.^{15,16,17,18} The most common change is wearing away of articular cartilage, even to the extent of exposing, eroding and polishing underlying bone. This and other changes in joints, bursae and associated structures are frequently called osteoarthritis. This does not mean that osteoarthritis is solely the result of use destruction. It does mean that wear and tear resulting from normal activity can form a large part of what is ordinarily called osteoarthritis. Any moving mechanical system wears out with time, and human joints are no exception. Nor does one have to postulate a special factor due to age. Increasing age simply gives increasing opportunity for use. The degree and severity of use destruction in a given joint mainly depends upon the type of movement to which that joint was most heavily subjected during life. Of course, any additional pathological or senile changes within a joint will complicate and aggravate the picture.

Use destruction will be exaggerated by any alteration in joint surfaces which might result from trauma or disease. Likewise, any decrease in the viscosity of synovial fluid will be followed by an increase in friction.

It is beyond the scope of this paper to go into further detail. The main point is that a certain amount of wear and tear is to be expected as a result of normal activity. This wear and tear will be increased as a result of trauma or pathological processes so that the picture of use destruction will be superimposed upon the picture specifically due to the pathological change.

Synovial Tissue and Synovial Fluid

One of the characteristic features of freely movable or diarthrodial joints is that the inner surface of the joint capsule is lined by a connective tissue called synovial membrane or synovial tissue. This tissue is concerned with the formation of synovial fluid, the viscosity of which is one of the major factors in the lubrication of joints.

Structure of Synovial Tissue.—The structure of synovial tissue has been studied and reported on many times. Most of the recent papers and reviews emphasize the fact that it is a connective

tissue, basically similar to connective tissue elsewhere in the body. Connective tissue is comprised of formed elements such as cells and fibers, together with ground substance which, under the optical microscope, appears to be an amorphous substance which stains metachromatically with dyes such as toluidine blue. This ground substance is important because it is the primary site of involvement of many pathological processes, including rheumatic disorders.

The various kinds of connective tissue differ in their arrangement of formed elements and in the relative ratios of fibers and cells. They also differ in ground substance constituents. For example, some of the important substances in this material are mucopolysaccharides, of which at least five different kinds are known to occur.¹⁰ One kind is hyaluronic acid, a sulfate-free type found in synovial fluid, vitreous humor, umbilical cord, skin and in certain tumors but not in hyaline cartilage. Other mucopolysaccharides are sulfate-containing and are found in a variety of tissues, including cartilage. There is as yet no accurate way of distinguishing these substances microscopically. Chemically, they all have certain characteristics. They are complex, asymmetric, long-chain compounds of high molecular weight which form viscous sols or even gels. They are attacked by a variety of enzymes, generally called hyaluronidases or spreading factors. It is likely that some type of precursor, such as a basic disaccharide, is formed elsewhere, brought to the connective tissue by the blood stream and there bound together or polymerized into a more complex compound by connective tissue cells. This entire process, about which little is known in detail, represents part of the group of changes comprising intermediary metabolism. Many phases appear to be under the control of the pituitary-adrenal system.

Synovial tissue is a connective tissue modified so as to have a relatively smooth surface lining the joint cavity. A variable number of folds and villi project from the surface. The tissue contains different types of cells which have no consistent arrangement and which, with ordinary staining methods, are indistinguishable from connective tissue cells elsewhere. In addition to cells and fibers, there are blood vessels, lymphatics and a few nerves. If there is any morphological feature which characterizes this tissue, it is its rich blood supply which forms an extensive capillary network directly adjacent to the joint cavity. The similarity

of this tissue to other connective tissues is stressed by the fact that if synovial tissue is removed it can be reformed from underlying connective tissue.

Synovial Fluid and Mucin.—Synovial fluid is really a liquid ground substance formed from the blood flowing through synovial vessels. Studies of synovial fluid in man have been made almost solely upon material obtained from the knee joint.

One of the characteristic features of synovial fluid is its sticky or viscous nature. This is due almost entirely to hyaluronic acid which, when precipitated with acetic acid, forms what is called a mucin. This is quite different from mucins of epithelial origin, and the ordinary mucin stains do not affect any of the mucopolysaccharides. Aside from its mucin content, synovial fluid is a filtrate or dialysate of blood plasma, that is, most of the constituents diffuse from blood through connective tissue into the joint cavity. Synovial fluid also contains a few cells which are derived from the lining tissue. They are mainly mononuclear and reflect the cytology of synovial tissue. Pathological processes affecting synovial tissue naturally alter the cellular content.

The presence of hyaluronic acid in synovial fluid cannot be explained on the basis of filtration. As mentioned above, all mucopolysaccharides, hyaluronic acid included, are probably formed by the linking together or polymerization of basic units. This implies that actual work is done by connective tissue cells. The viscosity of hyaluronic acid is dependent mainly upon polymerization. Any of the enzymes which attack these compounds first break down the intramolecular linkages without actually affecting the chemical structure. This depolymerization is accompanied by a very severe loss of viscosity. Thus, in some of the rheumatic disorders, synovial fluid contains what appears to be a normal amount of mucin but it is really an abnormal mucin, not as highly polymerized, so that it is more watery.

On the basis of present information, it must be admitted that the essential mechanisms in the formation of hyaluronic acid are unknown. So far as functions are concerned, synovial fluid provides the necessary viscous lubricating fluid. A number of other secondary functions have also been ascribed to this fluid. It is said to aid in the nourishment of articular cartilage. It may, but certain factors indicate that other means are also available. For instance, the ground substance of

cartilage is a sulfate-containing mucopolysaccharide, chondroitin sulfate A, but no sulfate groups of any significant amount have ever been found in synovial fluid. These groups must come from elsewhere, perhaps from perichondral or adjacent medullary vessels. Synovial fluid may also be concerned in water transfer because the mucin has a high water-binding capacity. Changes in this property may be factors in the production of watery joint fluids or effusions.

General Considerations.—There are two major features of joints which are of both academic and practical significance. One has to do with joints as functioning mechanical units which show wear and tear as a result of use. Secondly, joints contain an important type of connective tissue which is primarily responsible for the production of a lubricating fluid and which is subject to the same endocrine and metabolic control and to the same types of disorders as are other types of connective tissues.

One of the major difficulties in studying connective tissue has to do with the difficulty of devising adequate methods of investigation. There is no need to go into detail regarding the many research programs involving connective tissue. The majority concern mainly the clinical and therapeutic aspects. In basic science fields the methods of study are extremely varied, encompassing, for example, chemistry, histology, embryology and others. One of the fruitful fields has to do with the study of connective tissue in the embryo, when it is in the process of formation. For example, histochemical studies of hyaluronic acid might profitably be carried out when this substance is first appearing, that is, when cavitation is just starting in embryonic joints. But before this can actually be done there must be an accurate knowledge of the normal developmental processes. There is under way in the Department of Anatomy at Wayne University a study dealing with normal development of joints. It might be well, in the process of presenting preliminary results, to outline some of the basic mechanisms in joint development.

Development of Diarthrodial Joints

The available evidence indicates that the processes of development are basically similar in all forms so far studied, including amphibian, avian and mammalian material. Nevertheless, certain

features pose a number of difficulties, especially those pertaining to embryonic age or degree of development. Without going into detail, the difficulties can be illustrated by pointing out that two human embryos at comparable stages of development can differ in crown-rump length by as much as 100 to 150 per cent. As a corollary, one cannot assume that two embryos of equal crown-rump length are necessarily comparable in the degree of either external or internal development.

The development of human joints has been described in detail in recent papers^{3,7,8,9} and the findings reported illustrate certain important processes. In brief, the initial development of joints is rapid and a form and arrangement resembling that of the adult is reached before the embryonic period is over, that is, by approximately the seventh week of intra-uterine life. This is an extremely rapid process, it being estimated that the total time from the first indication that joint formation is under way until all nerves, ligaments, muscles, tendons, et cetera, are present, may be no more than a few days.

All joint components, such as ligaments, develop *in situ*, that is, in the same relation they will occupy in the adult. Thus, while it is commonly held that the cruciate ligaments of the knee form posteriorly and then migrate inwards to reach their position between the condyles, this actually never happens. When the cruciate ligaments can first be recognized, they are in the same relative position they will occupy in the adult.

There is no phylogenetic recapitulation in development, that is, there are no stages in which there are structures resembling those normally present in adult lower forms. Thus, while it is often stated that the menisci of the knee joint pass through a stage of development in which they have a discoid form resembling that of menisci found in certain adult reptiles, this does not normally occur. This lack of phylogenetic recapitulation is true of all species so far studied. Development proceeds from an initial, relatively indifferent form directly to the characteristic, genetically determined adult type form.

Cavitation does not begin until initial articular form is well established and even then, in the case of smaller joints, it may be delayed. When it does begin, it proceeds very rapidly and apparently involves the breakdown of connective tissue, perhaps by enzymatic processes. Within a short time the

lining tissue is structurally similar to that of the adult. The beginning of cavitation is a very important stage, at least in the larger joints, because it marks the increasing deposition of collagenous fibers, the growth and maturation of the joint, including the subsequent formation of a number of intra-articular structures, such as synovial villi.

Although the chick embryo is widely used in experimental and morphological embryology, there are, surprisingly enough, no accurate studies of the development of joints. O'Rahilly²⁰ has recently found that the early differentiation of synovial joints in the chick embryo resembles that described in the human embryo. He has correlated the microscopic appearance of developing joints with the external staging devised by Hamburger and Hamilton¹⁰ and has found that the joints resemble the adult in form and arrangement before cavitation actually is well under way. Cavitation begins peripherally in the knee joint by stage 35 (approximately 8 to 9 days after fertilization) and is fairly exact in onset. By selecting stage 35 on the basis of external features, one can be reasonably sure that cavitation is just under way. There is, therefore, no necessity of actually sectioning joints for microscopic study in order to determine this point. This is important, because in view of the improbability of being able to carry out chemical and histochemical studies on human embryos, lower forms must be used. If it is necessary to collect a large number of chick embryos so as to analyze chemically the joints at a specific internal developmental stage, it is now possible to select that internal stage on the basis of external characteristics. Thus the morphological bases for chemical and histochemical studies are fairly well established for the chick embryo. A comparable study of joint development and embryonic staging in mammals is now under way.

It should be emphasized that the findings cited above pertain to the larger diarthrodial joints, such as the knee and hip. There have been few, if any, complete studies of smaller joints in any species. There have been relatively few experimental investigations of joint development. Undoubtedly these will be forthcoming. They will have to be because many of the problems pertaining to joints can be solved only by embryological investigations. This is especially true as regards the genesis of connective tissue.

References

1. Bauer, W.; Ropes, M., and Waine, H.: The physiology of articular structures. *Physiol. Rev.*, 20:272, 1940.
2. Gardner, E.: Physiology of movable joints. *Physiol. Rev.*, 30:127, 1950.
3. Gardner, E., and Gray, D. J.: Prenatal development of the human hip joint. *Am. J. Anat.*, 87:163, 1950.
4. Gardner, E.: Synovial tissue and synovial fluid. The American Academy of Orthopaedic Surgeons. Instructional Course Lectures, 9:162, 1952.
5. Gardner E.: Development of Joints. The American Academy of Orthopaedic Surgeons. Instructional Course Lectures, 9:149, 1952.
6. Gardner, E.: Nerve supply of joints. The American Academy of Orthopaedic Surgeons. Instructional Course Lectures, 9:155, 1952.
7. Gray, D. J., and Gardner, E.: Prenatal development of the human knee and superior tibio-fibular joints. *Am. J. Anat.*, 86:235, 1950.
8. Gray, D. J., and Gardner, E.: Prenatal development of the human elbow joint. *Am. J. Anat.*, 88:429, 1951.
9. Haines, R. W.: The development of joints. *J. Anat.*, 81:33, 1947.
10. Hamburger, V., and Hamilton, H. L.: A series of normal stages in the development of the chick embryo. *J. Morphol.*, 88:49, 1951.
11. Jones, E. S.: Joint lubrication. *Lancet*, 226:1426, 1934.
12. Jones, E. S.: Joint lubrication. *Lancet*, 230:1043, 1936.
13. MacConaill, M. A.: The function of the intra-articular fibrocartilages, with special reference to the knee joint and the inferior radio-ulnar joints. *J. Anat.*, 66:210, 1932.
14. MacConaill, M. A.: The movements of bones and joints. The synovial fluid and its assistants. *J. Bone & Joint Surg.*, 32-B:244, 1950.
15. Meyer, A. W.: Further observations upon use-destruction in joints. *J. Bone & Joint Surg.*, 20 (N.S. 4):491, 1922.
16. Meyer, A. W.: The minuter anatomy of attrition lesions. *J. Bone & Joint Surg.*, 13:341, 1931.
17. Meyer, A. W.: Use destruction in the human body. *California & West. Med.*, 47:375, 1937.
18. Meyer, A. W.: Chronic functional lesions of the shoulder. *Arch. Surg.*, 35:646, 1937.
19. Meyer, K., and Rapport, M. M.: The mucopolysaccharides of the ground substance of connective tissue. *Science*, 113:596, 1951.
20. O'Rahilly, R.: The development of synovial joints in the chick. *Anat. Rec.*, 112:67, 1952.

MSMS

IN FOREIGN LANDS

In recent crucial elections
90% of Belgians VOTED
89% of Italians VOTED
82% of Englishmen VOTED
70% of Japanese VOTED

BUT IN THE U. S. A.

51% of Americans voted in the last presidential election!

LET'S BE 100% AMERICANS
LET'S REGISTER
and
LET'S VOTE!

Application of Ultrasonics in Chronic Rheumatic Diseases

By Max K. Newman, M.D., and
Alma J. Murphy, Ph.D.
Detroit, Michigan

THE STRESSES and strains of our industrial civilization have engrafted on the musculoskeletal system a terrific traumatic burden, resulting in varying degrees of breakdown of the muscles, nerves and osseous tissues. The prolongation of life through the magnificent development of medicine, surgery and miracle drugs has produced a further stratum for degenerative changes. As we well know, fully eight million individuals are affected in varying degrees by rheumatic changes, so that it is not uncommon to find tremendous surges of the populace toward methods of control, relief and cure. Witness the recent fiasco of large sums of money being expended for the privilege of sitting a mile below the ground in so-called radioactive contaminated atmosphere, and then finding occasional individuals being relieved of their rheumatic complaints.

Our problem is one of evaluation as well as discussion of a new therapeutic agent in the management of rheumatic states. It was not uncommon during the height of steroid exuberance; many claims were made in both scientific and lay publications as to the curative qualities of cortisone, ACTH, dihydrocortone and the like. However, through the years, physical medicine and rehabilitation, in conjunction with various drugs, procedures and methods, have consistently achieved the objectives of improvement of rheumatic states. We believe that it is most appropriate at this time to present a physical agent, namely high frequency sound, or ultrasound, as an adjunct physical method in the therapeutic management. It is not to be considered as the sole modality with the exclusion of general management, but rather to show its scientific application in these disturbances of the collagen system.

From the Department of Physical Medicine and Rehabilitation, Detroit Memorial Hospital, Detroit, Michigan.

SEPTEMBER, 1952

Physical and Physiologic Aspects of Ultrasound

Well known to the medical profession is the use of various segments of the electromagnetic spectrum in clinical application, i.e., radiant heat, diathermy and ultraviolet. Especially used is roentgen therapy. In a similar manner, ultrasound, a mechanical wave produced by vibrations of specialized apparatus, is transmitted through solid or liquid media, and produces a physical and physiological effect. It is not the purpose of this paper to go into adequate details of ultrasound, but suffice it to say that it is produced by an apparatus similar to a short wave diathermy. A piezoelectric crystal is cemented on an applicator head, called a transducer, and is made to vibrate by rapidly alternating current to produce vibration of the frequency of one megacycle. The ultrasound energy is conveyed to the body by the transducer through a solid or liquid medium, reproducing the wave within the tissue. The noted effects are cavitation (which is the compression and rarification of component particles producing an intermolecular strain, resulting in splitting of the media, producing cavities which collapse and add further vibrations causing physical changes); mechanical effects of dispersion and aggregation; thermal effects—most important in therapy; chemical effects (influencing oxidation, luminescence and depolymerization); biologic effects; physiologic effects (such as analgesia, hyperemia, increased cell permeability, vasodilatation and vasoconstriction, relaxation of muscle spasm, et cetera).

Literature

Most of the early literature on the medical application of ultrasonic waves originated in Europe. In a surprisingly short time the foreign medical literature became filled with exaggerated and uncritical claims and assertions concerning the benefits and cures made possible with ultrasound. It is not the purpose of this paper to review the entire field published on ultrasonics, but to present some of the more recent foreign and domestic publications pertinent to the field of rheumatic diseases.

Hintermann⁶ presented a review of 347 patients with lesions of the vertebral column that were treated by ultrasonics. The findings were those of increased mobility of the vertebral column and a definite analgesic effect. In 1948, Buchtala⁸ added another small group of arthritic patients to the increasing numbers of treated cases. Good results were reported when arthritic extremities

were treated. He also felt that the analgesic and thermal effects were predominant but that the neural effects on terminal neurons were also worth examination. The treatment of spondylosis deformans with ultrasound was reported by Demmel.⁴

proved in those cases of rheumatic diseases of a less chronic nature in which bony ankylosis and severe deformities have not occurred. Most of the literature published in this country has been of a laboratory research nature and has uncovered some

TABLE I. EFFECT OF ULTRASONIC ON RHEUMATIC DISEASES

Disease	No. Cases	Swelling	Tenderness	Stiffness	Motion	Pain	Comment
Rheumatoid Arthritis	4 Wrist	2—▼	2—▼	4—O	2—▲	2—▼	Temporary improvement (2)
		2—O	2—O		2—O	2—O	No response (2)
	2 Elbow	2—O	2—▼	2—▼	2—▲	2—▼	Asymptomatic (2)
	8 Knee	6—▼	8—O	6—▼	6—▲	6—▼	Fair to good response (6)
		2—O		2—O	2—O	2—O	No response (2)
Osteoarthritis	5 Fingers	5—▼	5—▼	5—▼	5—▲	5—▼	Good response (5)
	4 Knee	2—▼	2—▼	2—▼	2—▲	2—▼	Good response (2)
	9	2—O	2—O	2—O	2—O	2—O	No response (2)
Epicondylitis	9	3—▼	6—▼	None	No	5—▼	Cured (1)
		6—O	3—O	Present	Limitation	2—O	Dramatic relief (4)
	11					1—▲	Slight response (2)
							No response (2)
Bursitis	11	8—▼	7—▼	7—▼	7—▲	7—▼	Non calcified bursae all relieved (3)
		1—▲	4—O	4—O	4—O	4—O	Calcified bursae
		2—O					2 Cured
							2 Good
							2 Fair
							2 No results

▲ increased
O no change
▼ decreased or reduced

His good results were dependent upon the selection of the younger patients. Senile kyphosis, if not too chronic, also responded well to ultrasound with its analgesic effects. Scholtz⁸ reported on the effects of sound waves on peri-arthritis humeri and spondylarthritis and was able to produce considerable relief of pain. However, in ankylosing joint processes the results were very poor. Fuchs and Buchtala⁵ in 1949 again reported on the ameliorative effect following sonic therapy of peri-arthritis, polyarthritis, arthrosis, and arthritis deformans. They report improvement in 80 per cent of all cases treated, but express concern when the cervical ganglion of cardio-labile patients are treated with ultrasonics. In the treatment of osteoarthritis and other rheumatic diseases of joints, Bauer¹ feels that the use of sonic waves should not be started until the blood sedimentation rate returns to about normal and lists a number of rheumatic diseases that have been shown to respond well to sonic treatment. In 1952 a symposium was published in England that included reports from Bauer, Buchtala, Tchannen and Theo de Preux.² These men, writing under their separate titles, seem to feel that pain is decreased, joint function is increased, and the gait pattern is im-

interesting findings.⁷ Ultrasound waves are capable of destroying young bone cells and causing necrosis of the spinal cord, skin, or nerve fibers. However, no specific selective effect on tumor cells has been demonstrated, contrary to the European literature.

The following report is an evaluation of the effects produced by ultrasonics when applied to rheumatic states. A random selection of patients was made so as to utilize the therapeutic possibilities of ultrasound in the management of rheumatic states. The reasons for this selection were that all patients were ambulant, easily accessible, and had failed to respond to routine measures.

Method

The apparatus used for the treatments was an ultrasound generator of 3.5 watts per square centimeter output, with a frequency of one megacycle. The transducer or sound head was slowly moved over the area to be treated, with a film of lanolin spread between the head and the joint areas. In this manner very little loss of energy occurred. A treatment would require twenty minutes of continuous application, with an intensity of 2.5 to 3

watts/cm.² An average of three treatments was given per week for a period of one month. During treatment it was noted that a hyperemia occurred, with some edema of the tissues if the intensity was too great. No burns or paralysis resulted.

Previous to treatment, a routine history and physical was done. Laboratory work is not included in this report. Diagnosis was based upon examination, x-rays and findings of the involved areas. The groups consisted of: (1) rheumatoid arthritis, fourteen patients (divided into wrists, elbows and knees); (2) osteoarthritis, nine patients (divided into finger and knees); (3) epicondylitis, nine patients; (4) bursitis, eleven patients (eight showed calcifications in the subdeltoid area).

Results

In all observations, the effects on swelling, tenderness, stiffness, range of motion and pain were noted (Table I).

In rheumatoid arthritis, it was found that four patients with wrist involvement showed two temporary improvements and two failures. Both patients with elbow involvement became asymptomatic. In the knee involvements, six patients showed fair to good response, and two patients were failures.

In osteoarthritis, all patients (five) with heberdens nodes showed a good response (not morphologically). Two patients with knee involvement showed a good response, and two patients were failures.

Epicondylitis is characterized by pain at the epicondyles when the fingers are forcibly flexed. It seems to occur in athletes, machinists, stenographers and housewives, and cannot be diagnosed by x-ray alone because of negative findings. Of the nine patients treated, one was cured, four showed a good response, two showed only slight improvement and two showed no improvement. This syndrome is usually quite stubborn to therapy and frequently requires long immobilization to effect a recovery.

Bursitis, a form of periartthritis of the shoulder, had eleven cases. Three cases of non-calcifications all cleared during therapy. This might be expected since the grinding and traumatic effects of the foreign body is not present. Eight cases with calcification showed: two cured (of symptoms and signs), two good results, two fair results and two failures.

Comment and Conclusions

The use of ultrasound as a standard method or procedure must be undertaken with caution. Severe damage of tissue, bone, peripheral nerves, generative tissue, hair follicles and growing bone and tissues may occur with the application of high intensities. However, penetration and beaming are excellent, with good absorption in muscle rather than fat, making a case for localized heating. Nevertheless, these dangers are not too apparent with the present types of instruments that have been developed. There is also danger from the reflective qualities of ultrasound causing localized heating of muscle-bone interfaces, and care must be used in treating bony prominences. At the present time, dosage is determined by pain sensation and excludes the treatment of paretic areas.

The efficacy of ultrasound as a therapeutic adjunct to the treatment of rheumatic diseases is limited by the still undetermined dose to be used on each type of case, the immediate presence of the therapist or physician in the application of the modality, the high cost of the apparatus, and the necessity for a selection of cases that would benefit from the procedure. Perhaps from a practical standpoint, because of the coupling effect, the therapist must be constantly present, providing a distinct disadvantage. It is a fact that the values derived from the thermal qualities of ultrasonic therapy are those similar to the application of local heat, local joint injections, immobilization or other medical measures available to the practicing physician. However, it may be stated that there is inherent value in the use of this physical modality in the control of pain associated with rheumatic states. Where morphological change of tissue is present, the results are attenuated. The degree of improvement noted with ultrasound is similar to that of other medical and physical procedures, and it forms again a valuable addition to the therapeutic armamentarium of the physiatrist.

References

1. Bauer, A. W.: Technique of ultrasonic therapy. *Brit. J. Phys. Med.*, 14: No. 7 (July) 1951.
2. Bauer, A. W.: To introduce this issue. *Brit. J. Phys. Med.*, 15: No. 1 (Jan.) 1952.
Buchtala, V.: The present state of ultrasonic therapy.
Tschannen, F.: Effects of ultrasonic therapy on rheumatic diseases and circulatory disorders.
Preux, Theo de: Ultrasonic wave therapy in osteoarthritis of the hip joint.
3. Buchtala, V.: The therapy with ultrasonic waves; indications and contraindications. *Arztliche Wchnschr.* (June 15) 1948.

(Continued on Page 1232)

Protrusion of the Intervertebral Disk

By Ezra Lipkin, M.D.
Detroit, Michigan

IT IS but within recent years that the medical profession has become cognizant of the existence of a clinical entity known as "the slipped, or protruded, intervertebral disk." Up to that time, the origin of many so-called sciaticas had remained obscure, or were relegated to the general category of "rheumatism," of which there were numerous and sundry manifestations. The conscience of the physician was fully appeased when he applied the term "sciatic neuritis" to the malady of the patient suffering from pain in the leg. Little effort was made to differentiate between the primary neuritides and the secondary, or reflex, neuralgias. The appearance of the disk-concept upon the medical horizon revolutionized the physician's attitude toward this all-too-common complaint of "pain in the leg," and led to many a cure which was hitherto unthinkable. For, if we can apply the elusive term "cure" to any therapeutic procedure, the relief following appropriate treatment for protruded intervertebral disk justifies that application. In few other maladies are cause and effect so intimately related.

History.—Prolapse of the intervertebral disk was first described by Luschka in 1858. Kocher, in 1896, called attention to injury of intervertebral disks. Dandy, in 1929, described a prolapsed cartilage simulating a spinal cord tumor. Later Goldthwait, Middleton, and Teacher identified the protrusions as being nuclear material. In 1934, ruptured intervertebral disk was described by Mixer and Barr as a clinical entity. Since then, many others have added observations and details which establish ruptured intervertebral disk as a common cause of low backache and sciatic pain.²

Anatomy.—The intervertebral disk consists of an elastic fibrocartilagenous envelope, called annulus fibrosus. Within it is contained the nucleus pulposus, a mucoid or gelatinous mass. The elastic disk with its contained nucleus is attached above

and below to the vertebral bodies by cartilagenous plates.

Pathology.—As a result of either attrition, degeneration or trauma, the cartilage tears. This forces the nuclear material to the periphery of the annulus. A bulge at this point develops in the posterior circumference of the disk. The bulge, due to pressure of the nuclear material, in turn causes pressure against the posterior ligament, which is strongly attached to the posterior wall of the vertebral bodies. The ligament, due to its firmness and strength, usually forces the bulge laterally, causing pressure upon roots as they descend in the spinal canal. This is responsible for the sciatic pain. In over 90 per cent of cases, this protrusion occurs at the fourth or fifth lumbar interspace.

Symptomatology.—In the great majority of cases, there is low backache, with unilateral sciatic extension; there is accentuation of pain on coughing, sneezing and straining; a variable degree of paresthesia may be present; there is a history of trauma in at least 50 per cent, and a history of remissions and exacerbations in over 75 per cent, of the cases.

Physical Findings.—The characteristic findings are: spasm of the lumbar muscles, with limitation in motion in this region; diminution of the normal lumbar lordosis; limitation in straight leg raising; a positive Lasegue sign (pain in the back of the thigh or near the sacro-sciatic notch on extension of the knee, after the hip joint has been fully flexed); sciatic scoliosis in about one-third of the cases; and diminished or absent Achilles reflex.

Roentgen Findings.—Suggestive findings include narrowed intervertebral joint spaces, osteophytes, sciatic scoliosis, obliteration of normal lordosis, and the occasional finding of a Schmorl nodule (deposition of calcium in the body of a vertebra). The presence, however, of a protruded intervertebral disk can be demonstrated by a lipiodol x-ray, which makes such finding pathognomonic of this condition.

Laboratory Findings.—The most important laboratory finding is an increase in the protein content of the spinal fluid.

Treatment.—When, after a careful history, physical examination, x-ray and laboratory confirma-

Dr. Lipkin is Senior Attending Physician in the Arthritis Department of the North End Clinic, Detroit, Michigan.

tion, a diagnosis of protruded intervertebral disk has been made, one is justified in giving a conservative regime a trial, for a limited period of time. Among the conservative measures to be instituted are: rest in bed on a firm mattress, with the use of fracture boards between mattress and spring; traction to the affected leg, using 5 or 6 pounds of weight, with the extremity in about 15 degrees flexion and the same amount of abduction of the hip joint; analgesics; local heat and sciatic nerve block. When the patient is ready to get up, he should be fitted with a low back support. In many cases the above regime may be sufficient to allow the patient to carry on in comparative comfort. However, should conservative treatment prove unavailing, one should resort to surgical removal of the protruded portion of the disk. The results following laminectomy are almost 100 per cent effective. "The entire group of fifty-eight patients were immediately relieved of pain in the leg following operative removal of the ruptured disk."¹ Love and Walsh reported only two hospital deaths and five recurrences in a series of 500 patients operated on.³ Barr and Mixter reported good results in 80 per cent of patients, fair results in 10 per cent, and poor results in the remaining 10 per cent.

Case Reports

In the past six years, we have had occasion to observe and follow six cases of protruded intervertebral disks, verified by lipiodol x-ray, four of whom underwent surgery, and two were treated conservatively. We shall report them in the order of their occurrence.

Case 1.—M. H., a man, aged forty-two, first seen April 3, 1946, complained of pain in the left sacroiliac region, with radiation down the left leg. He gave a history of having fallen off a horse sometime previously. He had been told he had herniation of the disk, although x-ray confirmation was lacking. He made moderate improvement after the application of adhesive tape to the lower back, bed rest, and the injection of procaine in the tender sacroiliac region. The improvement, however, was not sustained, and he was eventually operated on, with complete recovery. Six years later, he was still free from pain.

Case 2.—T. S., a woman, aged forty, was seen February 10, 1949, with pain in the right leg, of eight weeks' duration. Conservative treatment with heat, salicylates, and procaine injection in the sacroiliac spine were unsuccessful. Flat plates of the pelvis revealed a mild lumbar scoliosis, with some asymmetry in the lower sacral

region, and a thinning of the disk between the fifth lumbar vertebra and the upper sacrum. She was hospitalized and a lipiodol x-ray made, which revealed a definite protruded intervertebral disk. Laminectomy was performed on March 4. The pain in the leg disappeared the next day, and on March 10 she was discharged, fully recovered. Three and a half years later, the pain had not recurred.

Case 3.—H. S., a woman, aged thirty-six, first seen on May 5, 1949, complained of pain in the left sacroiliac region and left leg, of five months' duration. She was a mild diabetic. Procaine into the sacroiliac area, sciatic nerve block, and typhoid vaccine intravenously failed to give more than transient relief. At the University Hospital, where she was referred, a prolapsed disk was demonstrated. Control of the diabetes and a well-fitted support relieved the pain considerably, and the patient has been fairly comfortable, without an operation, up to the present time.

Case 4.—On April 21, 1949, M. S., a woman, aged thirty-three, was literally carried into our office, with severe pain in the lower spine and right leg, of one week's duration. A similar condition existed four years previous to this attack, and also one year ago, the latter attack lasting about one month. There was pronounced sciatic scoliosis, tilting of the pelvis, shortening of the affected leg, and marked tenderness on pressure over the sacroiliac and lumbosacral joints. Straight leg raising was painful. The Lasague test was positive. The pain was so severe, the patient had to be taken by ambulance directly to the hospital. Flat x-rays revealed semisacralization of the fifth lumbar vertebra, asymmetry of the lumbosacral segments, and irregular synchondrosis and synostosis between the fifth lumbar vertebra and the sacrum. A myelogram revealed a protruded intervertebral disk, predominantly midline and on the right, at the intervertebral space between the fourth and fifth lumbar vertebra. On April 30 she had a laminectomy, and on May 2 was completely free from pain. On May 7 she was discharged from the hospital fully recovered.

Case 5.—T. H., a man, aged fifty-eight, consulted us on March 6, 1950, for pain in the left leg, of five weeks' duration. He gave a history of sustaining an injury to his back on January 31, while lifting tires. The pain was aggravated by coughing, sneezing, straining, and bending. There was an absent Achilles reflex on the left. He was treated with physiotherapy, salicylate, nerve blocks, and was moderately improved for about nine months. He returned on February 1, 1951, with a recurrence of the pain in the left leg. Three more sciatic nerve blocks failed to relieve the condition, whereupon he was hospitalized and a myelogram done. The results were non-conclusive, as "the caudal sac ended at a high level." Because of the classical symptoms and clinical findings, however, the patient was operated on, March 1, and a herniated disk was removed at the fourth lumbar interspace on the left side. Following the resection, the patient made a very satisfactory recovery, and has been free from pain ever since.

Case 6.—J. S. D., a man, aged forty-eight, was seen on May 23, 1952, at his home, with severe pain in the left leg. He was a moderate alcoholic, and gave the impression of suffering from alcoholic neuritis. However, he was not relieved by thiamine and procaine nerve block, and was hospitalized on May 26. He was seen in consultation with a neurosurgeon, and a diagnosis of protruded intervertebral disk was made. Leg traction was applied and continued for several days. The condition improved somewhat, and the patient was advised to obtain a sacroiliac belt, and continue under observation.

The above reports illustrate the satisfactory results that follow laminectomy for protruded intervertebral disk, and the improvement that sometimes follows conservative regime, although it is impossible to predict the duration of such improvement, as many cases have spontaneous remission of the symptoms, probably due to regression of the nucleus pulposus and release of pressure upon the lumbosacral plexus. It is for this reason that a long period of observation is essential, and that surgery may eventually have to be resorted to.

Differential Diagnosis

Since, as stated above, protruded intervertebral disk constitutes only one of the causes of sciatic pain, it may not be amiss to consider the other conditions in which sciatic pain is an original or complicating factor.

Among the most common causes of sciatic pain are: lumbosacral or sacroiliac strain, with reflex sciatic radiation; arthritis of the spine; fibrositis of the posterior sacroiliac ligaments and gluteal region, often with spasm of the muscles; spasm or irritation of the hamstring muscle (from arthritis, sacroiliac disease, et cetera); increase in weight, faulty posture with exaggeration of the normal lumbosacral angle, flat feet, knock knee, neoplasm of the spine, et cetera.

Other causes of sciatic pain include diseases of the pelvic organs (inflammation or tumors of the prostate, rectum, uterus or ovary); constitutional disease (syphilis, diabetes, pernicious anemia, vitamin B deficiency, alcohol or lead poisoning); lesions of the spinal cord, meninges or cauda equina, thickened ligamenta flava; spondylolisthesis; arthritis of the hip; contracted fascia lata or iliotibial band; late stages of pregnancy (from pressure); exposure to cold or dampness; congenital abnormalities of the lumbosacral joint, and psychoneurosis.

It is apparent, therefore, that the discovery of the cause of sciatic pain is not a simple process.

A thorough history must be taken, with special stress on traumatic onset and remissions of symptoms. Physical examination must include search for infected foci, diabetes mellitus, perineuritis from metallic poisoning, pelvic and abdominal pathology, et cetera. A rectal examination should always be done (to rule out tumor of the prostate); also a complete blood count, urinalysis and Kahn test; orthopedic and neurologic examinations; finally, roentgen examination of the lower spine and pelvis, and lipiodol x-ray, if a protruded intervertebral disk is suspected.

To rule out reflex sciatic neuralgia from sciatic neuritis, a 1 per cent procaine hydrochloride solution is injected at the site of tender "trigger points" in the low back. In reflex sciatic neuralgia, the pain in the leg temporarily disappears.

Treatment of Sciatica due to Other Causes than Protruded Intervertebral Disk.—It is obviously impossible to establish a specific routine for a condition which has so many varied causes. The primary consideration is to find the original cause of the sciatic pain. Possible causative factors, such as diabetes, syphilis, alcoholism and vitamin B deficiency should be treated specifically. Pelvic pathology—inflammation or tumor of the prostate, rectum, uterus or ovary—should be eliminated. Traumatic or infectious conditions of the lumbosacral or sacroiliac joints, fibrositis of the lumbar muscles with sciatic radiation should be treated by adequate support, rest in bed on a firm mattress, and, if necessary, with boards between the mattress and the spring, with local heat and traction. Analgesics—*aspirin*, *phenacitin*, and *codeine*—should be used as needed. Local infiltration of "trigger points" with 1 per cent procaine or sciatic nerve block give symptomatic relief, which at times may last over a long period of time. X-ray irradiation over the lumbosacral region or over the distribution of the sciatic nerve may prove of benefit in some cases.

Technique of Sciatic Nerve Block.—With the patient in Sims position and the leg to be treated uppermost on the table, a line is drawn connecting the posterior superior spine of the ilium with the upper border of the greater trochanter. Midway on this line a one-and-a-half inch line is dropped perpendicularly downward. At the end of this line, a wheal is made by intradermal injection of a 2

(Continued on Page 1224)

Investigation of Steroids in Postpartum Plasma

By E. B. Smith, Ph.D., and
Hugo A. Freund, A.B., M.D.
Detroit, Michigan

AT THE MEETING of the American Rheumatism Association in 1951 Granirer^{1,2} recited his experiences with the use of "postpartum plasma in suitable amounts" in the treatment of rheumatoid arthritis. At that time, he reviewed the previous favorable results which were first announced at the International Congress on Rheumatic Diseases in 1949. Because these effects were not universally observed by others who had followed this method of treatment, it seemed desirable to fractionate postpartum plasma and try to find the component that might be responsible for the reported clinical improvement. Chiefly because of the work on cortisone, corticotropin and other steroids, it was thought that the active component might be of steroid nature. Such a search for the presence of the specific substance in increased amounts during pregnancy seemed justifiable because, as Hench³ has said, "Despite the clinical efficacy of corticotropin, cortisone and hydrocortisone, it remains to be proved to what extent, if any, these particular hormones are responsible for the antirheumatic effects of pregnancy and jaundice."

Methods

The steroid fraction from blood and urine was separated by dialyzing⁴ the sample against 0.4 per cent sodium chloride, then concentrating the dialysate in the desivac. The concentrated material was then hydrolyzed by adjusting to a pH of 1 to 2 and autoclaving at 15 pounds pressure for two hours. The hydrolysate was extracted with ether and the chromatograms for the component steroids developed according to the method of Zaffaroni⁵ et al. The procedure was as follows: The steroid was incubated with Girard's T Reagent at 38° C. for two hours. The spot was then placed on the paper and developed with a water saturated solution of butanol. The color of the spots was devel-

oped with a potassium iodoplatinate solution, which gave a purple color with the steroids.

The steroid fraction of placenta was studied by grinding the placenta in a Waring Blender, then completely dialyzing and following the same procedure as above.

Results

The chromatograms on the steroid fraction of pregnancy urine (five to six months) can be found in the *Enzyme Research Notebook*. Components with an Rf value of 0.569, 0.288 and 0.168 were found in the urine. These are average values from three chromatograms. The components probably correspond to estrone and progesterone for the first two. The third component is not definite but might be similar to adrostene 3.17 dione, which has an Rf value of 0.15. The placenta only revealed one component steroid by this method. This steroid had an Rf value of 0.20 and is probably progesterone. The postpartum plasma did not show any significant steroid spots. It must be remembered that this method is limited to ketonic steroids and different steroids with the same number of ketone groups, and will travel at approximately the same rate.

Discussion and Summary

The analysis of pregnancy urine and placenta did not reveal much beyond estrone and progesterone components. The postpartum plasma did not show even these. Hence, the steroids in the plasma are in too small a concentration to be analyzed for by this method, or are of a non-ketonic nature. It should be mentioned that the postpartum plasma used in these studies was a clear yellow straw color, as is normal plasma; Granirer has reported the postpartum plasma he used has a green opalescent color. In an article published in *Science*, he states he believes that the responsible factor in question is something besides a steroid.

Recent reports add further evidence to the assumption that there are other factors that influence remissions in rheumatoid arthritis.

References

1. Granirer, Louis W.: Paper presented at a meeting of the American Rheumatism Association (June) 1951.
2. Granirer, Louis W.: Proc. Internat. Cong. Rheumatic Dis. (June) 1949.
3. Hench, Philip S.: Proc. Conf. Effects of Cortisone. Rahway, New Jersey: Merck and Co., 1951.
4. Proc. Soc. Exper. Biol. & Med., 61:161, 1946.
5. Zaffaroni, et al: J. Biol. Chem., 177:109, 1949.

This report is a part of one phase of arthritic research supported by funds of the Michigan Chapter of the Arthritis and Rheumatism Foundation.

OUR
DREAM
COMES
TRUE!

**President, Michigan State
Medical Society**



Editorial

A TRIBUTE

THE EDITOR wishes to express his appreciation to James J. Lightbody, M.D., for his invaluable assistance and enthusiasm in preparing and assembling the scientific papers in this number of THE JOURNAL. Again we have presented to our membership the very latest information of the subject of arthritis and rheumatism. The papers are a complete coverage, and an evidence of the interest of our profession in the subject. Together with the rheumatic fever diagnostic centers conducted by the Society this makes an outstanding contribution.

We thank Dr. Lightbody and his committee.

BREATHING SPELL?

CONGRESS is not in session and no legislative action can now be taken. We therefore have a breathing spell during which the threat to independent practice of medicine is less obvious, and our members might get the idea we need not continue to fight. The immediate threat is being held in check by the phenomenal success of our voluntary health insurance. We have approximately eighty-five million persons protected for hospitalization, and sixty-five million carrying protection for medical or surgical services. Fundamentally, the efforts of the medically sponsored health plans have been and are still, to care for the unexpected or unusual illness, the large or catastrophic costs of illness. At first Michigan Medical Service attempted to cover all illness, but found it was too unpopular, too costly, too uncertain, too unpredictable, and not necessary.

Blue Cross and Blue Shield plans are now available to every person who needs protection, to every person who wants protection, but must never be forced on any person who does not want it. Such is the ambition and purpose of all the voluntary health service plans, whether sponsored by the medical profession, the hospital groups, or insurance companies. Health service is a new development of the past two decades, born out of necessity, and growing rapidly. The program has fended off the drive to socialize the nation through

its health professions. The plans grew as they must, and could, to accomplish their objective. The people have been protected, the socialistic trend has been temporarily thwarted, and the "planned" economists are, just for the moment, in hibernation. Now is the time for our plans to readjust, to find and correct abuses, to study methods of rendering better and more complete care to our public. We must build for stability and for security.

The medically sponsored plans actually belong to the profession. They are our pledge to the people that the profession is conscious of their needs, or necessities; that we are both willing and able to give our best thought and efforts to bridge the trying times. We have done a herculean job, but it is not complete. Every abuse, every day of overhospitalization, every unnecessary cost adds to the risks of not being able to fulfill our obligations. To the profession the medical or hospital plan is not just another insurance company to pay and pay. It is our own creation, our own bulwark against socialism, our pledge to our patients. An attack upon its stability is an attack upon ourselves, our pledges and our sacred honor.

WILLIAM BEAUMONT AND MACKINAC ISLAND

THE MICHIGAN State Medical Society has for many years been interested in the work of William Beaumont, M.D., pioneer in research on digestion. A committee of our Society, after years of study and effort, succeeded in buying what remains of the old American Fur Trading Company headquarters where Alexis St. Martin was shot and his stomach laid open. President Otto Beck has made as his chief objective this year a complete restoration of this building as a memorial to William Beaumont.

It is the hope that sufficient money, about \$40,000, might be raised to complete this project. About one-quarter of our members thus far have contributed, giving an average, to date, of \$11.06 per person. We hope that many more members will join in this very worthy project.

We wonder if our members appreciate what an opportunity the doctors of Michigan have. Mackinac Island is a storehouse of colonial and pioneer history. No other place in the state can compare; in fact, there is more historical interest in this little beauty spot of Michigan than there was in Williamsburg which the Rockefeller Foundation restored and made into a National Shrine. Hopefully, the same thing will happen at Mackinac Island. By a strange coincidence, the Michigan doctors are presented with an opportunity again to be pioneers in a project which might have a far-reaching and very interesting outcome. We hope you, our readers, will have an inspiration to become an integral part of this movement; will have the urge to join in, and will immediately, while the thing is fresh in mind, send a check to the headquarters office in Lansing or to Dr. Otto Beck in Birmingham.

This memorial is a fine project, worthy of endorsement. If you agree, why not send a small check right now, before you forget, to the Lansing headquarters of the Society or to President Beck in Birmingham. The small check will not be missed after it is sent on, but the ultimate good will be lasting. It might even be a preliminary to a wonderful historical restoration in a most historic and delightful small island in our proud State.

Write that check now, please!

HOSPITAL OVER-USAGE AND EXPENSE

MOST of our older doctors remember when to hospitalize a patient required some argument with him—sometimes some definite persuasion. Never would one go to the hospital unless very seriously ill or if surgery was necessary. Modern times and philosophy have changed all that. Now the effort seems to be rather to discourage many with trivial ailments from going to the hospital and to get others to return home sooner.

Many of our patients argue that they have carried the insurance just to have it available in case of need, and now that they can use it they are going to the hospital; it is their right. The fact that the hospital plans were established not for diagnostic, but for remedial services, makes no impression.

We admit it is easier to care for patients in the hospital; also, in many instances, much easier to

work out a diagnosis in an obscure case. This recent trend has filled our hospitals to overflowing and has increased their costs to the breaking point. Many services are expected that are new and costly; many that are helpful or pleasant, but not entirely indispensable. The result has been increased hospital costs and scarce hospital beds.

Our patients complain not only of this expense but also of the lack of available beds. Of late many have blamed this situation on health service plans. We believe such a charge is not justifiable. We have gone through a revolutionary change in our economy. Our homes are not planned to care for the sick; our people would much rather pay for a trained attendant to give the indicated care. Costs have necessarily increased.

Patients frequently complain, but have our doctors explained—taken the time to satisfy the families, or attempted to defend the health workers from unjust criticism?

Hospital costs have multiplied. Especially those of us who have paid such bills recently know that! No one can blame the patients for concern, but the medical attendant many times may ease the discontent by careful mutual discussion.

Our doctors have a double duty in such cases. Explanation of costs, and their reasons are available for the patient, and protection of the insurance service plan and hospital from over-use of its facilities is an equal obligation.

Recent government reports show that general living costs have gone way over 190 per cent; labor earnings much more; but medical costs barely 40 per cent. Hospital costs are increasing with living costs because they constitute food, shelter and service, all of which are part of living costs.

Whatever the cause, whether increased illness, over-utilization, too many hospital days, too many non-essential services ordered; whether the demands of the patient and his family, the neglect of the doctor; or his overzealousness in caring for his patient—whatever the cause, we have reached a situation where the build-up of hospital costs has made hospital usage a real problem. The independent family who must foot its bills is having a difficult time, and the service plan is being subjected to a severe financial strain. There is one answer—increase in assessments. That we do not wish, but both the doctors and the patients must face facts.

REAPPORTIONMENT PLAN No. 3

ACCORDING to the Constitution of the State, the Legislature is supposed to be reapportioned each ten years. This has not been done for many years because it was actually the responsibility of a group which could not agree. In order to correct this situation and effect a regular reapportionment, two provisions will be submitted to the voters at the November election.

Plan No. 2 sponsored by the labor groups would reapportion both the Senate and the House of Representatives on a purely numerical basis. If this were done, four counties (Wayne, Oakland, Genesee and Macomb) would control the whole state legislature.

Plan No. 3, sponsored by the Michigan Committee for a Balanced Legislature, seems to be characterized by good common sense. It is based on the geographical distribution, controlled by a population formula, and would give representation to all rather than a few chosen by virtue of population density.

Thirty-three States and the Federal Government have adopted the Balanced Legislature plan.

If you are in favor of a balanced legislature, be sure to vote on both plans. The count will be made on a percentage of all votes cast for that measure. If you vote NO on No. 2 and YES on No. 3, you will have registered twice. You will have registered your opposition to the one you do not favor, and your approval to the one you do favor. If you vote on only one, you have not registered your disapproval of the other and a smaller number of YES votes will carry. A No vote takes a Yes to cancel and another to carry.

Be sure to vote on both plan No. 2 and plan No. 3. Plan No. 2 gives four counties control of the Legislature. Plan No. 3 is for a Balanced Legislature.

MICHIGAN CRIPPLED CHILDREN'S COMMISSION

THIS YEAR the Michigan Crippled Children's Commission is faced with decreased appropriations for medical care and treatment for the State's fiscal year, July 1, 1952 to June 30, 1953. The Commission can take care of only four persons where previously five received attention under the former appropriation. In other words, 10,000 cases were cared for last year, but this year only 8,000 will receive care.

Economies in ordering out-patient extras is therefore needed, as well as continued cooperation in discharging patients from the hospital as soon as conditions permit.

At the recent joint meeting with the Council of the Michigan State Medical Society, the Michigan Crippled Children's Commission differentiated between hospital care for true medical need, and boarding house care because of social problems.

The Commission also invited attention to the sixty-day billing clause in the afflicted children's laws of the State of Michigan. If no billing is submitted within sixty days, the account cannot be paid. To make the physician's billing easier last year, the Commission developed an entrance report. This does not relieve the responsibility of the attending physician to notify the consultant, and for all physicians to send their bills to the Commission, in order that they may be paid, within the sixty-day limitation.

The Commission also reported that in a large number of counties, the Commission is paying the limit of fees allowed by law—that is, the Uniform Fee Schedule for Governmental Agencies—up to the legal ceiling of \$90.00. However, there are a number of counties receiving less because of another provision of the law which prohibits paying more than any other government agency in a given county. This involves payments by the Social Welfare departments in individual counties, some of which pay less than the Uniform Fee Schedule rate, although the State Department of Social Welfare has accepted the Schedule. In such counties negotiations should eliminate this discrimination.

SHORTAGE OF PHYSICAL THERAPISTS

HUNDREDS of drugs have been used in the treatment of arthritis and rheumatism and allied diseases, but the one medium of treatment that has lasted through the years is physical therapy. Arthritics throughout the world have attended varieties of "mineral" springs, health resorts and spas, and have continued to take the "baths" to receive some measure of relief from the pain, discomfort and disability caused by these diseases. There are still many places in Europe and the United States where disabled arthritics make their pilgrimages each year for therapeutic baths, massage, rest and dietary therapy.

In the last ten years, modern medicine has

made an effort to study the benefits derived from these treatments and have developed extensive departments of physical therapy in our large modern hospitals. Numerous types of equipment associated with the use of short wave therapy and various heat lamps have been added in the new field of physical medicine which is now reaching a point of importance comparable to that of any of the other major departments in our hospitals.

No matter what program of specific medication is used in tablet, capsule or injectible form in the treatment of arthritis, there should be a continuous program of physical therapy and rehabilitation and re-education of the patient, as very few arthritics will improve satisfactorily without regular physical therapy.

The discovery of Cortisone and ACTH re-awakened an interest in the field of arthritis and the medical profession has accepted a responsibility which they had previously sloughed off to other practitioners, particularly in the realm of the cults. With this increased interest in the treatment of these diseases, there has also arisen a demand for increased utilization of the implements of physical medicine in an extensive program of rehabilitation. This renewed interest has brought to light a series of deficiencies in available professional personnel, particularly a shortage of trained physical therapists—and also a shortage of Doctors of Medicine who have shown a specific interest in this new specialty.

There are only two physiatrists in the State of Michigan who by training and experience are properly qualified to assume the responsibilities of heads of departments of Physical Medicine. There has not been any college or university in the State of Michigan where young men or women may go to study to learn about the problems of the arthritics and where they can remain over a period of time to attain a degree in physical medicine. A school of Physical Medicine will be started at the University of Michigan this Fall, and we hope that the Doctors of Medicine will attempt to stimulate young men and women to go into this field to assist and coordinate the activities of the physicians and nurses and physiatrists. We are sure that the obvious advantage of having a school of physical medicine available in the State of Michigan will eventually greatly improve the treatment of the arthritic. It is a long term program, and the need is great.

JAMES J. LIGHTBODY, M.D.

PROTRUSION OF THE INTERVERTEBRAL DISK

(Continued from Page 1218)

per cent procaine solution, and through that wheel a 4-inch needle is directed inward, and probed until the sciatic nerve is touched. At this point, the patient signals a sensation of an electric shock, and 20 cc. of 1 per cent procaine is injected. The patient feels a numbness creeping over the entire leg, which may persist for about two hours. After an interval of five days, the injection is repeated. When properly injected, the relief is instantaneous. No untoward results—such as paralysis of the leg—have followed repeated injections, in our experience, over a long period of time.

Summary and Conclusion

Six cases of protruded intervertebral disk were discussed, of which four were operated on, with highly successful results, and two were treated conservatively with a fair degree of improvement. The history, symptomatology, physical findings, x-ray and laboratory findings were described in detail, as well as the differential diagnosis and treatment. Finally, a brief discussion was given of sciatic pain due to causes other than protruded intervertebral disks, and a regime of general treatment suggested where no specific etiology was apparent. The foremost consideration, however, must be given to the discovery of the *cause* of sciatic pain, and its systematic elimination. A painstaking search for such cause will, more often than not, prove a highly rewarding experience.

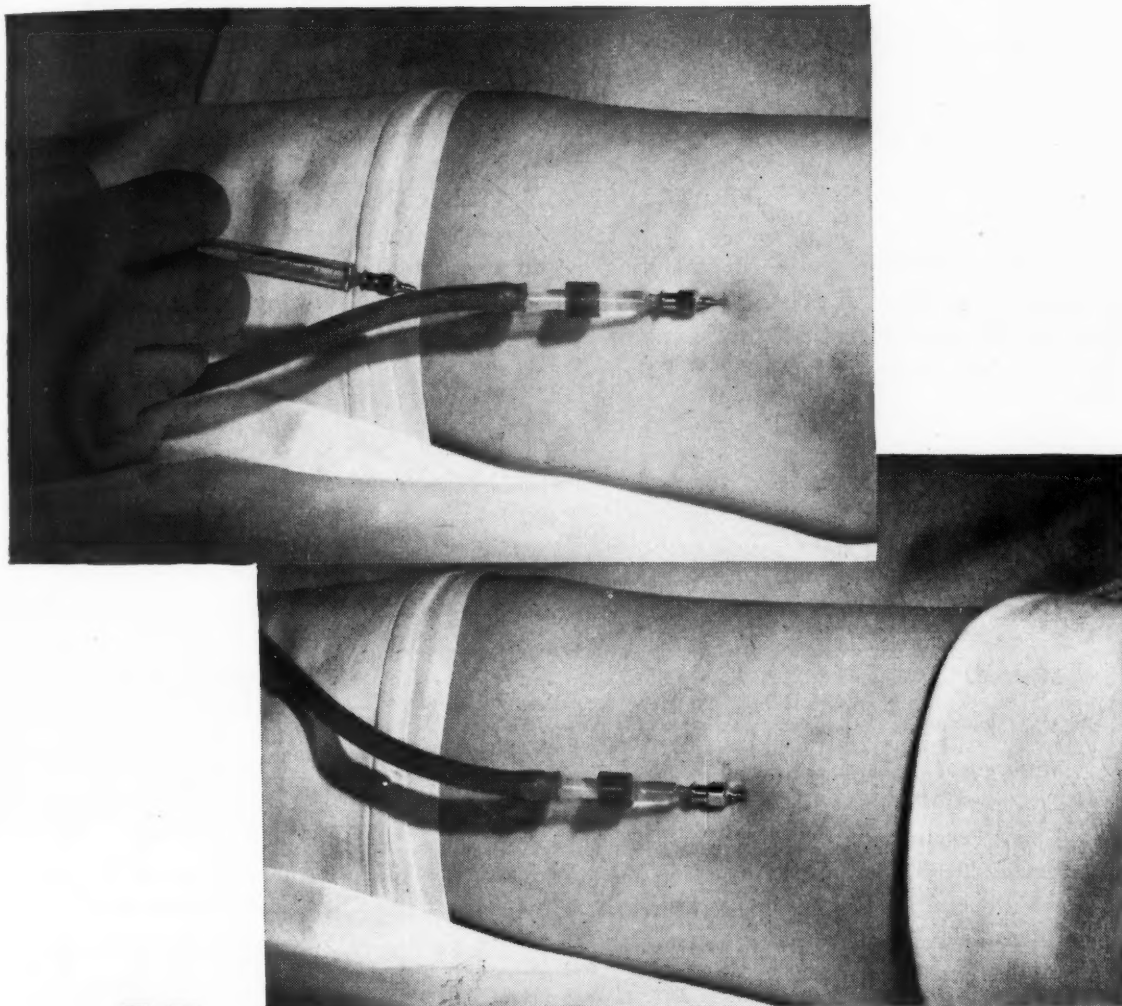
References

1. Comroe, Bernard I.: Arthritis. Page 750.
2. Judovich and Bates: Segmental Neuralgia in Painful Syndromes. Page 213.
3. Love, J. G., and Walsh, M. N.: Arch. Surg., 40: 454, 1940.

5715 Michigan Avenue

FOOT AND MOUTH DISEASE LABORATORY

Secretary of Agriculture Charles Brannan has announced selection of Plum Island, 1½ miles off northern tip of Long Island and 10 miles from Connecticut mainland, as site for research laboratory for foot-and-mouth and other animal diseases. Congress has appropriated \$10 million for the project.



Vein-Sparing

Parenteral Alimentation Facilitated with **ALIDASE**

For either rapid or slow administration of fluids, the use of **ALIDASE**®—highly purified hyaluronidase—places hypodermoclysis on a practical basis. When Alidase is added to the first few cubic centimeters of fluid, absorption from subcutaneous tissue is greatly facilitated. Injection is thus permitted at a convenient site with little or no swelling or discomfort, without arm boards and without many of the difficulties encountered with intravenous injection.



SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

ANNUAL MICHIGAN POSTGRADUATE PROGRAM FOR GRADUATES IN MEDICINE

The Michigan State Medical Society, in co-operation with the University of Michigan Medical School, Wayne University College of Medicine, and the Michigan Department of Health, announces the *extramural* semi-annual postgraduate program for the fall of 1952:

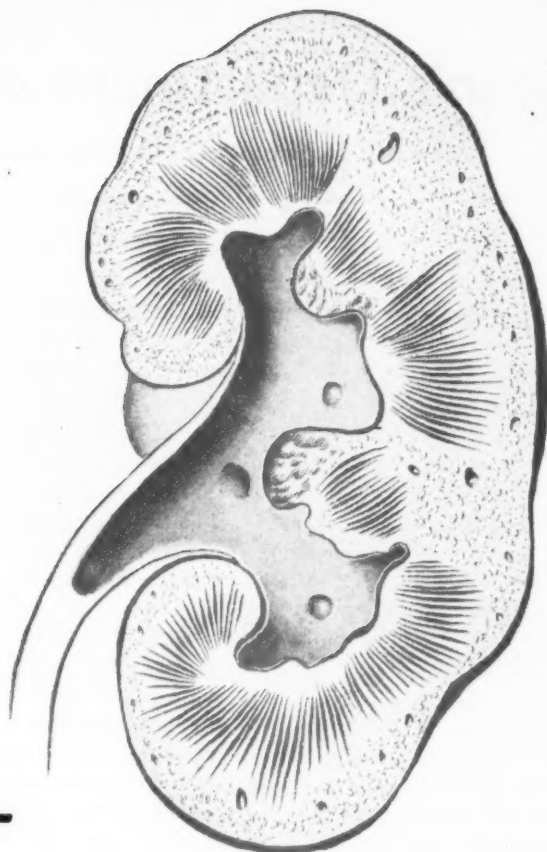
Place	Date
Alpena.....	Thursday, October 23
Battle Creek.....	Tuesday, October 7
Bay City.....	Wednesday, October 22
Flint.....	Tuesday, November 25
Jackson.....	Tuesday, November 18
Lansing.....	Tuesday, October 28
Midland.....	Friday, November 14
Mt. Clemens.....	{ Wednesday, October 1 Wednesday, November 5
Muskegon.....	Wednesday, October 8
Traverse City.....	Thursday, November 6
Upper Peninsula	
Sault Ste. Marie.....	Monday, November 10
Marquette.....	Tuesday, November 11
Ironwood.....	Wednesday, November 12
Escanaba.....	Monday, November 10
Houghton.....	Tuesday, November 11
Menominee.....	Wednesday, November 12
Iron Mountain.....	Thursday, November 13

The following *intramural* courses will be given at the University Hospital, Ann Arbor:

Basic Sciences.....	September 29, 1952-June 7, 1953
Clinical Internal Medicine.....	Thursdays. October 2-Dec. 18, 1952; January 8-April 16, 1953. 1:30-5:00 P.M.
Clinical Exercises for Practitioners.....	Wednesdays. October 1-December 17, 1952. 10:00 A.M.-5:00 P.M.
Pediatrics.....	October 8-11, 1952
Cancer.....	February 2 and 3, 1953
Obstetrics.....	January 21-24, 1953
Gynecology.....	February 25-28, 1953

Further information may be obtained by writing to H. H. Cummings, M.D., Chairman, Department of Postgraduate Medicine, Room 2040, University Hospital, Ann Arbor, Michigan.

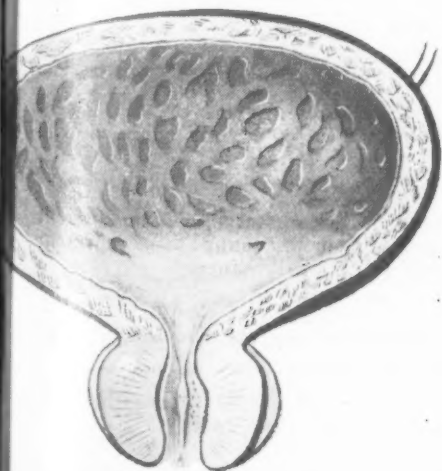
*attain
the goal
in
acute
urinary
tract
infections—
quickly...*



The immediate goal in pyuria, regardless of etiology, is to render the urine sterile. SULAMYD,[®] (sulfacetamide—Schering) is a highly soluble sulfonamide, rapidly cleared from the blood stream and highly bacteriostatic for most common urinary tract pathogens. SULAMYD quickly controls infections with negligible risk of renal complications because of its ready solubility in urine.



SULAMYD



Schering CORPORATION
BLOOMFIELD, N. J.
IN CANADA: SCHERING
CORPORATION, LTD., MONTREAL



SULAMYD

Michigan's Department of Health

Albert E. Heustis, M.D., Commissioner

GAMMA GLOBULIN

Until such time as there is conclusive evidence that gamma globulin is an effective prophylactic in the prevention of poliomyelitis, the gamma globulin distributed by the Michigan Department of Health is to be used in the prevention of measles.

The investigation carried out in Provo, Utah, in 1951 involving the administration of gamma globulin to approximately 2,900 children was an experiment. Unfortunately, this soundly devised experiment for the evaluation of prophylactic potency in the control of poliomyelitis did not provide conclusive evidence. The Michigan Department of Health, therefore, does not encourage the use of gamma globulin in the prevention of poliomyelitis.

The Michigan Department of Health produces and distributes a number of biologic products to the citizens of Michigan through their local health departments and family physicians. All of the products so produced and distributed have a specific use and are available because they are of proved merit. Research and clinical trial has provided us the necessary knowledge to verify their validity for the purpose for which they are produced and distributed. Gamma globulin is one of these products distributed by the Michigan Department of Health for the specific purpose of prevention of measles. This policy and purpose has not changed.

The "Certificate of Death" has been revised to include a statutory amendment provided by Act 65, P. A. 1952 which was given immediate effect. Item 18 on the death certificate now reads "Informant's name."

The special case-finding program in venereal disease and tuberculosis carried on in Detroit from May 1 to July 15 recorded a final total of 41,097 blood tests and 29,720 chest x-rays.

Assistance in handling recalcitrant tuberculosis patients is being made available by the Department. A staff member is being assigned to work with four classes of patients: (1) Persons suspected of having active pulmonary tuberculosis and refusing to submit to examination for a clinical evaluation of the disease; (2) Persons known to have active pulmonary tuberculosis and refusing to be hospitalized in an approved sanatorium; (3) Persons under treatment or observation in an approved sanatorium and who leave without a proper medical discharge and against medical advice and (4) Persons whose treatment is completed but who refuse to cooperate in the post-sanatorium follow-up program. Requests for this service should be made to the local health department or where there is none, to the Michigan Department of Health.

NEW SIGN—HDA

A new sign will make its appearance along Michigan Highways this fall, a compact, green and gold sign carrying a bold "HDA." It will mark "Health Department Approved" resorts, replacing the black and white "Sanitation Approved" sign in use for many years.

Presence of the sign will mean that the resort has been inspected by either a local or a state health department sanitarian and that it meets local and state health department standards for approved resorts. The traveller may count on a safe water supply, satisfactory sewage disposal, regular garbage disposal, good building construction, proper ventilation, adequate lighting, proper heating equipment, cleanliness, sanitary sources, storage, preparation and handling of food and use of pasteurized milk and milk products. If there is a bathing beach, it will be free from dangerous pollution or undue safety hazards. Noxious weeds such as poison ivy and poison oak will have been eliminated or kept under control. Guests at the resort will be required to register and the registers will be kept for not less than three years.

The Department is beginning an intensive campaign of educating highway travellers to stop at HDA resorts.

A new type of pre-service training in public health was given in Michigan this summer. Four University of Michigan medical students took their externships in public health medicine under a program sponsored by the Department. One man worked in the Department on health problems of migrant labor, two were in the Washtenaw County Health Department and one was in the Grand Rapids Health Department.

The State's water fluoridation program makes steady progress. Lake Odessa became the 25th community to fluoridate its supply. Michigan is one of the top-ranking states in percentage of population drinking fluoridated water. It leads, also, in the topical application of fluoride. It is the only state using dental and dental hygiene students, under supervision, in giving this protective service to children.

Bronchitis, pneumonitis, and atypical or virus pneumonia are the conditions most commonly confused with lung cancer.

* * *

Doctors should be alert to the fact that a small silent shadow on an x-ray film of the lung may represent altered density caused by an early cancer.

* * *

Most silent cancers of the lung are not within range of the bronchoscope.



THE HAVEN SANITARIUM, INC.

1850 PONTIAC ROAD ROCHESTER, MICHIGAN

Telephone Olive 1-9441

LEO H. BARTEMEIER, M.D.
Chairman of the Board
HILBERT H. DE LAWTER, M.D.
Clinical Director
MR. GRAHAM SHINNICK
Manager

A private hospital 25 miles north of Detroit for the diagnosis and treatment of mental and emotional illness—psychoanalytically trained resident physicians.



Luxury without peer! A fine new Fall Oxxford suit fashioned of the finest imported fabrics. One try-on and you'll agree that never before have you experienced such burdenless bliss . . . such rich distinction. These fine fabrics have been magnificently hand-tailored and are now in abundance in our shop.

KILGORE and HURD
1259 WASHINGTON BLVD  IN THE BOOK TOWER
DETROIT

In Memoriam

RUSSELL G. EDGAR, M.D., of Detroit, died July 9, 1952 at the age of sixty-one.

For the past thirty-four years Dr. Edgar had practiced medicine in Detroit. Previous to that, he had practiced in Clarkston, following his graduation from the Detroit College of Medicine in 1914.

He was a member of the staff of Delray General Hospital for many years.

He is survived by his wife, Lena; a daughter, Mrs. Helen Watts; a son, Robert H. Edgar; a brother, Horace; a sister, Miss Olive Edgar; and one grandson.

JOSEPH P. GILDING, M.D., of Vicksburg, died August 2, 1952 at the age of forty-five.

Dr. Gilding had practiced medicine in Vicksburg following his graduation from the University of Michigan Medical School in 1931.

During World War II he served in the Army Medical Corps.

Dr. Gilding is survived by his wife, Gladys; two daughters, Mary and Margo; and a son, Peter.

SIDNEY L. LaFEVER, M.D., of Ann Arbor, died July 26, 1952 at the age of fifty-three.

For more than twenty-five years Dr. LaFever had served the community of Ann Arbor as an obstetrician and gynecologist. He was graduated from the University of Michigan medical school in 1924, and interned for two years at the Elizabeth Steele Magee Hospital in Pittsburgh, Pennsylvania.

He had served as chief of staff of St. Joseph's Mercy Hospital in 1949 and 1950. Dr. LaFever was a member of the American College of Surgeons.

He is survived by his wife, Florence and a son, Richard. He also leaves a sister, Mrs. Marion Bronson of Watkins Glen, N. Y.; and a brother, Lester LaFever of Corning, N. Y.

FRANK D. LINN, M.D., of Albion, died July 19, 1952 at the age of fifty-two.

Since 1947, Dr. Linn had served the community of Albion as an otolaryngologist. Previous to that, he had practiced in Memphis, Tennessee.

He was graduated from the University of Michigan medical school in 1924 and interned at Harper Hospital, Detroit.

During World War II he served in the Navy medical corps and spent four years in the Pacific Theater. At one time he commanded an evacuation hospital at Guam.

Dr. Linn died at Council Bluffs, Iowa, where he had gone to attend the wedding of a friend.

He is survived by his wife, Bonar; a son, Frank Linn, Jr., and a brother, Max Linn.

FRED C. MUSSER, M.D., a former Detroit practitioner, died July 1, 1952 in Hollywood, California, at the age of sixty-four.

Dr. Musser was graduated from the Detroit College of Medicine in 1915 and interned at Providence Hospital, Detroit. He was on the staff of Woman's, Harper, Florence Crittenton, and Providence Hospitals.

After suffering a coronary attack in 1943, he moved to California where he limited his practice to cardiology.

He is survived by a daughter, Marilyn, and a son, Freddie Mercer, a motion picture actor.

CHARLES T. PANKHURST, M.D., a retired Ionia otolaryngologist, died August 4, 1952 at the age of seventy-four.

Dr. Pankhurst received his medical degree from Western Reserve University School of Medicine in 1904. He was licensed to practice medicine in Michigan in 1912 and first served the community of North Star for ten years before coming to Ionia where he practiced for twenty-seven years.

He was a former president of the Ionia-Montcalm County Medical Society.

OTTO T. TOEPEL, M.D., of Detroit, died July 19, 1952 at the age of eighty-one.

Dr. Toepel had practiced medicine in Detroit for more than half a century. He was an Emeritus member of the Michigan State Medical Society. A native Detroit-er, Dr. Toepel was graduated from the Detroit College of Medicine in 1893.

He served a part of a term as Wayne County coroner in 1904. Dr. Toepel is survived by his wife, Emily.

COLIN C. VARDON, M.D., of Detroit, died July 23, 1952 at the age of sixty-six. Since 1911 Dr. Vardon had practiced surgery in Detroit. He was a senior surgeon of the Highland Park General Hospital staff.

Dr. Vardon died in San Francisco, California, while on a vacation trip.

He was graduated from the Detroit College of Medicine in 1911. Dr. Vardon was a Life Member of the American College of Surgeons and a Fellow of the International College of Surgeons.

He is survived by his wife, Edith, and two sons, Colin C., Jr., and Robert. He also leaves a sister and two brothers. They are Ann Vardon, Edward M. Vardon, M.D., and William S. Vardon.

An enlarged node that lasts three weeks should be regarded as a danger signal, demanding complete investigation.

* * *

While the early nodes of lymphosarcoma tend to be rounded and firm, they may be soft, as early Hodgkin's nodes often are, and even an apparent or real fluctuation would not be sufficient evidence on which to rule out a malignant lymphoma.

* * *

There is nothing pathognomonic about the blood count in malignant lymphoma.

Correspondence

Wilfrid Haughey, M.D.
610 Post Bldg.
Battle Creek, Michigan

Dear Dr. Haughey:

The attached copy of my letter addressed to John W. Castellucci, is self explanatory. Surely the tremendous success of the Michigan Medical Service must be attributed in part, not only to the Physician Relations program but to you as editor of the JOURNAL.

With greatest personal regards, I am

Sincerely,
LEWIS G. HERSEY
Executive Director
The Medical Service Bureau
Utah State Medical Association

July 29, 1952

John W. Castellucci
Assistant to the Director
Michigan Medical Service
Washington Boulevard Bldg.
Detroit, Michigan.

Dear John:

It was with considerable interest that I read the article entitled "You Built It," in the June issue of THE JOURNAL of the MICHIGAN STATE MEDICAL SOCIETY. Certainly you and your associates may take unlimited pride in the splendid work you have done in Physician Relations.

In addition, surely a word of commendation is in order for the exceptionally fine recognition afforded such publicity in the JOURNAL.

With greatest personal regards, I am

Sincerely,
LEWIS G. HERSEY
Executive Director
The Medical Service Bureau
Utah State Medical Association

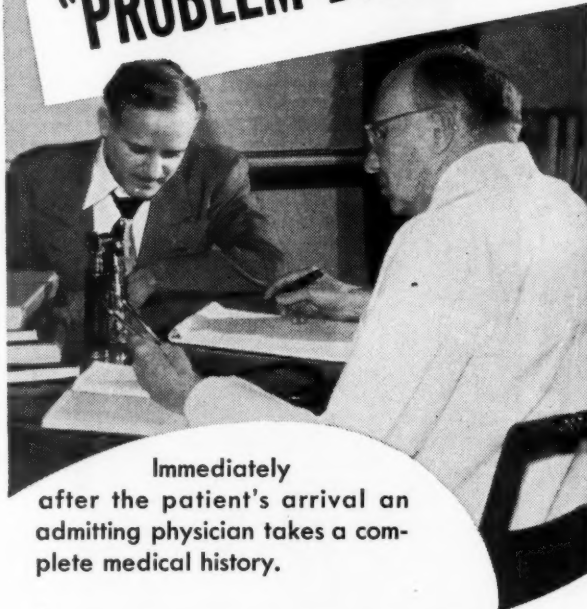
Mr. William J. Burns, Executive Secretary
Michigan State Medical Society
124 West Allegan Street
Lansing, Michigan.

Gentlemen:

There is a fine young doctor in your midst who in my opinion reflects the highest credit on his profession. I refer to Dan W. Everett, M.D., Edwardsburg, Michigan.

On July 3, 1952, I began an automobile trip with my family from Detroit, Michigan, to my home in Chicago. I became ill in Ypsilanti and by the time we reached Edwardsburg I was in a very bad way. We inquired of the state highway police if there were a doctor in the vicinity and they directed us to Dr. Everett. When we arrived at his office it was pretty late, about 10:30 P.M., and he was closing up. Nevertheless, without hesitation, Dr. Everett came out to the car and examined me. He expressed deep concern as to whether or not I would be able to make it to Chicago. He concluded it would be risky for me to continue the trip without medical attention. Casting aside all personal consideration for himself and at that hour of the night, he took his car and drove ahead of us 10 miles to the Pawating Hospital at Niles where I received excellent treatment under his supervision. For this deed of mercy and sacrifice I am deeply grateful for these are traits rarely found in the

Individualized Care for the "PROBLEM DRINKER"



Immediately
after the patient's arrival an
admitting physician takes a complete
medical history.

Treatment of the alcoholic is more than a sobering-up process; it is a rehabilitative procedure tailored to the needs of the individual.

The physicians at The Keeley Institute have had many years' experience in treating this class of patient and are specialists in their chosen field.

On arrival the patient is taken in hand by an admitting physician who obtains a complete medical history. This constitutes the first step toward instituting individualized care and treatment.

Subsequently, following a thorough physical examination and indicated laboratory studies, a detailed course of management can be outlined. It should be emphasized that no patient is continued under treatment unless he recognizes his problem and cooperates with the staff physicians.

Member, American Hospital Association
Member, Illinois Hospital Association

The Keeley Institute is accredited by the Council
on Medical Education and Hospitals of the A.M.A.

Complete information, including rates, will be
furnished to physicians on request.

THE KEELEY INSTITUTE
DWIGHT, ILLINOIS

Prescription Perfect



RED LABEL • BLACK LABEL
Both 86.8 Proof

Every drop of Johnnie Walker is made in Scotland—using only Scotland's crystal-clear spring water. Every drop of Johnnie Walker is distilled with the skill and care that comes from many generations of fine whisky-making.

Every drop of Johnnie Walker is guarded all the way to give you *perfect* Scotch whisky... the same high quality the world over.



Born 1820... still going strong

**JOHNNIE
WALKER**
BLENDED SCOTCH WHISKY

Canada Dry Ginger Ale, Inc., New York, N. Y., Sole Importer

1232

Say you saw it in the Journal of the Michigan State Medical Society

doctors with whom I have had experience. I know some who positively will not come out at night to tend the sick unless the patient is known to them. By contrast, Dr. Everett did everything he could for me and he had never seen me before and probably never will again.

Dr. Everett's display of human kindness and dedication to give succor to the sick does not end here. When I asked him to tell me his fee he wrote it down and told me I could mail the money to him. I told him that I was willing and able to pay immediately but he refused to take the money stating that I should keep it, that I might need it if additional medical care became necessary. I finally prevailed upon him to let me pay but I really had to beg him to take it and that is no exaggeration.

There is no way to measure the hope and comfort and confidence such a doctor inspires in a patient. To me Dr. Everett symbolizes everything that is decent and noble and commendable. I sincerely hope you consider him worthy of commendation also.

Respectfully yours,

Mrs. LOLITA J. DRINKARD (signed)

5007 Prairie Avenue
Chicago, Illinois
July 24, 1952

EMERGENCY MEDICAL ATTENTION

We continually hear of patients being unable to get emergency medical attention. I have, as yet, been unable to find in our community or elsewhere any such cases. It is time that we speak up and ask the accusers to point out where and when it is that people don't get medical attention. They will be unable to show any such cases. Occasionally, in our community, such statements appear in the newspapers. Prompt investigation has always revealed the untruth of the statements. Our newspapers have willingly printed corrections in every case. It is time that doctors everywhere begin to speak up.—W. ROBERT MALONY, M.D., *Illinois Medical Journal*, May, 1952.

ULTRASONICS IN CHRONIC RHEUMATIC DISEASE

(Continued from Page 1215)

4. Demmel, F.: Experiences with ultrasonic therapy. *Deutsche med. Rundschau*, No. 7 (July) 1948.
5. Fuchs, H. K., and Buchtala, V.: Results of ultrasonic therapy and experimental investigations. *Deutsche med. Wchnschr.*, No. 9 (Mar.) 1949.
6. Hintzelmann, U.: Ultrasonic therapy in rheumatic disease. *Deutsche med. Wchnschr.*, No. 5-26 (July) 1947.
7. Investigators of the Mayo Clinic and Mayo Foundation: Present status of use of ultrasonic energy in physical medicine. *J.A.M.A.*, (Feb. 23) 1952.

JMSMS



NEWS MEDICAL

MICHIGAN AUTHORS

Charles E. Frohman, Ph.D. and V. Everett Kinsey, Ph. D., of Detroit, are the authors of an article, "Studies on the Crystalline Lens," published in the *Archives of Ophthalmology*, July, 1952.

Reed O. Dingman, D.D.S., M.D., of Ann Arbor, is the author of an article "Meniscectomy in Treating Lesions of the Temporomandibular Joint," published in the *Journal of Oral Surgery*, April, 1952; abstract in *Digest of Ophthalmology and Otolaryngology*, July, 1952.

Kenneth B. Babcock, M.D., of Detroit, is the author of an article, "The Excessive Use of Blue Cross Benefits," published in *Hospitals*, July, 1952.

E. H. Steffensen, M.D., H. B. Ivy, M.D. and F. O. Nagle, M.D., of Detroit, are the authors of a paper, "Topical Compound F in the Treatment of Anterior Sigmata Eye Disease," in the *American Journal of Ophthalmology*, July, 1952.

H. Saul Sugar, M.D., of Detroit, is the author of an article, "Evaluation of Results in Correction of Horizontal Concomitant Strabismus," in the *American Journal of Ophthalmology*, July, 1952.

Maurice Croll, M.D., and Leo Croll, M.D., published a paper "Ocular Manifestation of Trichinosis," in the *American Journal of Ophthalmology*, July, 1952.

Mark A. Hayes, M.D., Ph.D., and Frederick A. Collier, M.S., M.D., F.A.C.S., of Ann Arbor, are the authors of a paper, "The Neuroendocrine Control of Water and Electrolyte Excretion during Surgical Anesthesia," published in *Surgery, Gynecology and Obstetrics*, August, 1952.

Eugene A. Osius, M.D., of Detroit, is the author of an article, "Acute Massive Venous Occlusion," published in *Archives of Surgery*, July, 1952.

A. B. McGraw, M.D., R. R. Margulis, M.D., and B. E. Brush, M.D., of Detroit, are the authors of an article, "Twofold Effect of Corticotropin (ACTH) on Blood Clotting and Its Implications in Surgery," published in *Archives of Surgery*, July, 1952.

Leonard E. Himler, M.D., of Ann Arbor, is the author of an article, "Incidence and Types of Human Relations Problems," published in *Industrial Medicine and Surgery*, August, 1952.

William J. Fulton, M.D., of Detroit, is the author of an article, "How Human Relations Problems are Dealt with by Medical Directors, Physicians and Nurses," published in *Industrial Medicine and Surgery*, August, 1952.

S. Behrman, M.D., of Ann Arbor, is the author of an article, "Genesis of Fetal Abnormalities," published in *GP journal of The American Academy of General Practice*, August, 1952.

George L. Waldbott, M.D., of Detroit is the author of an article, "Contact Dermatitis of the Hands," published in *GP journal of The American Academy of General Practice*, August, 1952.

Lyons N. Howland, of Ann Arbor, is the author of an article, "The Techniques and Importance of Interviewing," published in *Industrial Medicine and Surgery*, August, 1952.

* * *

Volume I, Number 1, of a new monthly journal entitled *Obstetrics and Gynecology*, sponsored by the American Academy of Obstetrics and Gynecology, will appear in January, 1953. It is believed to be the first new monthly periodical exclusively devoted to this field to be launched in over thirty years, according to an announcement by Dr. Carl P. Huber, Academy President. The new journal will publish original articles, reviews, clinical notes, editorials, and book reviews covering the entire range of clinical obstetrics and gynecology. Subscription \$12.00 per year.

The Academy has appointed Dr. Ralph A. Reis of Chicago, Editor of *Obstetrics and Gynecology* and the following Board of Associate Editors: F. Bayard Carter, M.D., R. Gordon Douglas, M.D., Ludwig A. Emge, M.D., Arthur T. Hertig, M.D., S. Leon Israel, M.D., William F. Mengert, M.D., Norman F. Miller, M.D., and Herbert E. Schmitz, M.D.

* * *

Hill-Burton Hospital Construction in Michigan, to August 1, 1952, includes the following:

Completed and in Operation: Twenty-two projects at a total cost of \$19,187,485, including federal contribution of \$6,935,312 and supplying 1,351 additional beds.

Under Construction: Fifteen projects at a total cost of \$15,345,986, including federal contribution of \$6,119,113 and designed to supply 798 additional beds.

Approved, But Not Yet Under Construction: Two projects at total cost of \$561,955, including \$312,723 federal contribution and designed to supply 41 additional beds.

* * *

Food and Drug Administration, acting through the Federal Security Administrator, has issued in final form a modified series of regulations bringing federal prescription requirements into conformity with the new Durham-Humphrey Act (P.L. 215, 82nd Congress). The new regulations: 1. Provide labeling guide to manufacturers on directions for use of drugs. 2. Continue labeling exemptions for physicians. 3. Tighten up rules to make certain that prescription drugs are dispensed only by or on the prescription of a physician or other licensed practitioner. 4. Exempt certain habit-forming

ANNOUNCING A NEW
MERCURIAL DIURETIC

CUMERTILIN[®] SODIUM

(Mercumatilin Sodium—Endo)



For controlled treatment of
salt retention edema

- Basically different in chemical structure
- A promptly effective, potent diuretic
- High degree of freedom from untoward systemic effects
- Well tolerated intramuscularly
- Works well without adjuvant ammonium chloride

Supplied: 1cc and 2cc ampuls in boxes of 12, 25 and 100.

THE G. A. INGRAM COMPANY
4444 Woodward Avenue, Detroit 1, Mich.

drugs from the prescription-only restrictions when used in non-hazardous combinations.

The new regulations are an amended version of proposed regulations published in February. However, the new ones do not attempt to rule on certain points in dispute since February. Specifically, the final regulations make no mention of prohibiting sale by mail of prescription drugs, do not attempt to define toxicity and do not apply "method of use" as a criterion for prescription-only designation (the *proposed* regulations listed all injection drugs except insulin as prescription-only).

FDA is reserving the right to rule on these controversial points in the future, but a spokesman said the agency did not wish to delay longer the official publication of regulations on which he said there is substantial agreement among the pharmaceutical industry and the medical profession.

The new regulations appear in the Federal Register for July 25 (Vol. 17, No. 145). Copies may be obtained from Food and Drug Administration, Washington 25, D. C.

Food and Drug Administration has ruled that, if the standards set by Public Health Service are met, fluoridated water supplies are outside FDA's jurisdiction and, under most conditions, foods prepared with such water "will not be regarded as actionable . . . because of the fluorine content of the water."

* * *

National Science Foundation has begun collecting records of all federal agencies offering grants or contracts to educational and non-profit institutions for scientific research. It hopes to have a complete report on all funds ready by the first of next year. Direct research of the various agencies will not be included.

* * *

The Keogh-Reed bills, which would establish a voluntary pension plan for the self-employed, including physicians, have been revised considerably, and Frank G. Dickinson informs us that there is a possibility that the new bills (H.R. 8390 and H.R. 8391, introduced on June 27) will be considered if Congress is in session at any time during the remainder of 1952. Otherwise the bills will be re-introduced in the next Congress.

Dr. Dickinson listed these new features of the revised (identical) bills:

(1) A lifetime limit of \$150,000 on the total amount which an eligible taxpayer could exclude from taxable income for the purpose of saving for his old age; (2) eligible taxpayers now over age 55 could exclude more than the limits of \$7,500 or 10 per cent of earned income, whichever is the lesser; (3) only the self-employed and persons not covered by private or public employer-employee pension plans are eligible; (4) the amounts excluded from current taxable income could be invested either in a restricted trust fund or a restricted retirement annuity issued by an insurance company; (5) a carry-over of unused exclusions for a period of not more than five years; (6) no withdrawals until age 65 (changed from age 60) unless totally disabled for more than three months.

Congressmen Keogh and Reed now believe that this

bipartisan bill could be passed after January 1, 1953, if enough sustained effort is made by national organizations representing the self-employed.

* * *

A new program has been set up by the American Medical Association to acquaint physicians newly-discharged from the armed forces with existing opportunities in private practice, industry, hospitals and medical schools throughout the country. Inaugurated by the Council on National Emergency Medical Service, the plan incidentally will also provide replacements for physicians classified priority I under the "Doctor Draft Law" who are now deferred from active military service because of essentiality.

The Council will contact army, navy and air force physicians before they are discharged to find out if they have any post-service plans. If the doctor hasn't made any plans, he may indicate to the Council where he wants to locate and in what field of medicine he is interested. This information will be sent to state medical societies and to state medical advisory committees to the Selective Service System. Correspondence with individual physicians on these lists will be handled by either the state advisory committees or the medical societies.

* * *

The International College of Surgeons (United States Chapter) Annual Assembly was held at the Conrad Hilton Hotel, Chicago, September 2, 3, 4 and 5, 1952. One of the featured speakers was the Right Honorable

Lord Thomas Horder, physician to Queen Elizabeth, Chairman of the Fellowship for Freedom in Medicine, and Member of the Council of the British Medical Association. Dr. Horder's topic at the Convocation was "Freedom in Medicine." Over 700 new Fellows were received into the College at this ceremony to be held at the Civic Opera House, September 5.

The scientific sessions and the exhibits were held at the Conrad Hilton Hotel where the annual banquet was held on September 4 with another outstanding British surgeon, Mr. Arthur Dixon Wright, F.R.C.S., Member of the Council of the Royal College of Surgeons, as the principal speaker.

Henry W. Meyerding, M.D., Rochester, Minnesota, is President and Arnold S. Jackson, M.D., Madison, Wisconsin, is Secretary, the United States Chapter, International College of Surgeons.

* * *

H. W. Brenneman, Public Relations Counsel of the Michigan State Medical Society, was chairman of the opening meeting of the American Medical Association's Medical Public Relations Institute held in Chicago, September 4 and 5. The first meeting was dedicated to "Practical Ways to Increase Physician Participation in Society Activities" and "Putting PR to Work."

Questionnaires will be sent out this month by the AMA's Committee on Research to determine what medical research projects currently are in progress throughout the country. The survey has a threefold purpose: To

Identify Yourself with World Health

through

THE WORLD MEDICAL ASSOCIATION

by joining its

UNITED STATES COMMITTEE, INC.

(Approved by American Medical Association)

Membership Brings You . . .

1. *Certificate of Membership*, your introduction card to 700,000 doctors of 43 nations joined in a world-wide movement for the highest possible level of health.
2. *The World Medical Association Bulletin*, issued quarterly, and all published studies, with data nowhere else available on scientific, economic, educational and social world trends.
3. *Letters of Introduction* to foreign medical associations and their members, facilitating professional contacts when you travel abroad.
4. *A share* in representing the interests of the practicing physician before other international groups such as UNESCO and WHO.
5. *The satisfaction* of sharing the advantages of American medical progress with other lands, thus repaying a debt for the inspiration we have drawn from many countries through the generations.

JOIN TODAY!

Louis H. Bauer, M.D., Secretary Treasurer
U. S. Committee, Inc., World Medical Association
2 East 103rd Street, New York 29, N. Y.

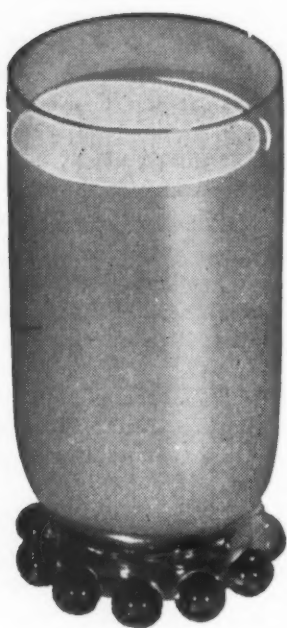
I desire to become an individual member of The World Medical Association, United States Committee, Inc., and enclose check for \$..... my subscription as a:

.....Member	\$10.00 a year
.....Life Member	\$500.00
.....Sponsoring Member	\$100.00 or more per year

Signature

Address

Name of your Bulletin.....



Sealtest
BUTTERMILK

THE MEASURE OF QUALITY

Buttermilk...

a beverage with unique values

Buttermilk in the bottle is in the same state which sweet milk reaches when it is first acted upon by the digestive juices. Therefore it is partially pre-digested. Moreover, there is little chance of it forming hard, tough curd-masses in the intestinal tract.

These are some of the unique values of buttermilk in combating certain intestinal derangements among infants and adults, in relieving constipation and alleviating stomach disorders. For buttermilk of uniformly high quality, made with pasteurized milk, may we suggest Sealtest Buttermilk?

DETROIT CREAMERY

EBLING CREAMERY

establish an up-to-date file of medical research projects; evaluate the premise that certain fields of medical research are suffering from lack of financial support, and consider the actual contribution of individual scientists in terms of free time and personal expenditure of funds. A random sample of 15,000 physicians from all parts of the United States and selected personnel from medical schools, public health services and pharmaceutical firms will be asked to participate in the survey.

* * *

The Committee on Indigent Care of the AMA's Council on Medical Service has outlined the following criteria for developing indigent medical care plans. The Committee believes that indigent medical care plans should provide all the services which normally are available locally to other citizens, and should make equal services available to all indigent persons—the blind, old age pensioners, dependent children. Also, the Committee feels that such a plan should provide for medical supervision and, wherever possible, offer a free choice of physician for both home and office care. The plan should use existing facilities, avoid duplication and provide for local administration by a single agency of the medical program for all groups concerned.

The Committee believes that medical care for the indigent is a local problem requiring the wholehearted co-operation and participation of local physicians. Such plans should be administered locally regardless of the source of funds.

The sum of \$671,834 was turned over by the American Medical Education Foundation to the National Fund for Medical Education for distribution to the 79 medical schools in the United States. This represents the amount collected from physicians during the first six months of 1952. This money added to the amount collected from industry by the National Fund for Medical Education was distributed July 31 in the forms of grants amounting to \$15,000 to each of the 72 four-year schools and \$7,500 to each of the seven two-year schools.

* * *

The American Medical Association has deferred action on the establishment of any new specialty boards involving the certification of persons who are not doctors of medicine until after the Council on Medical Education and Hospitals has completed its study of all allied scientific fields. This report will include studies of various professional non-physician groups whose work is closely related to the practice of medicine, such as clinical chemistry and clinical psychology.

* * *

A new series of radio transcriptions entitled "The Heart of America" will be released September 15 by the AMA's Bureau of Health Education. Dramatizing various aspects of the heart and its diseases, the 13 programs in the series are summarized by outstanding cardiologists and related experts. Subjects include: research in heart disease; heart murmur; rheumatism and rheumatic heart disease; the congenital heart disease program; the heart

NEWS MEDICAL

and athletics; coronary disease; overweight and the heart; arterial disease; high blood pressure and the heart; surgery for heart valve and arterial diseases; the heart in relation to stresses and strains; rehabilitation; protecting the good heart from injury, and how to live with a damaged heart. The series was produced in co-operation with the American Heart Association.

* * *

Director Edwin L. Crosby, M.D., former superintendent of Johns Hopkins Hospital, Baltimore, opened the new Joint Commission on Accreditation of Hospitals office September 1 at 660 Rush Street, Chicago. The Commission, with representatives from the American Hospital Association, the American College of Surgeons, the American College of Physicians, the Canadian Medical Association and the American Medical Association, will assume responsibility for the hospital standardization program formerly carried out by the American College of Surgeons. The Commission's program will get under way early this fall.

* * *

The American Fracture Association announces its thirteenth annual meeting at the Hotel Sherman, Chicago, on October 6-9, 1952, under the chairmanship of Henry W. Meyerding, M.D., Rochester, Minn. For copy of program, write Secretary-Treasurer H. W. Wellmerling, M.D., 610 Griesheim Bldg., Bloomington, Illinois.

* * *

E. C. Long, M.D., Detroit, President of the Michigan Academy of General Practice, has been authorized to develop a plan for the formulation of a House of Dele-

gates of the MAGP. The Michigan Academy and the Wayne County Academy of General Practice are sponsoring a scientific program at the Kellogg Center, East Lansing, on Monday and Tuesday, November 17 and 18.

* * *

The American Medical Education Foundation announces that seventy-nine medical schools in the United States were awarded Class "A" grants on July 31, totaling \$1,132,500. A Class A grant amounts to \$15,000 for each four-year school and \$7,500 for each two-year school.

* * *

"Why the Private Practice of Medicine Furnished in This Country Is the Finest Medical Care" is the subject of the 1953 (Seventh Annual) National Essay Contest for high school students sponsored by the Association of American Physicians and Surgeons. AAPS will award six national prizes: the first \$1,000; the second \$500; the third \$100; fourth, fifth and sixth, \$25 each. Contest starts January 1 and essays must be submitted on or before March 1, 1953. For information, write AAPS, 360 N. Michigan Avenue, Chicago 1, Illinois.

* * *

"Health needs and health care in two selected Michigan communities" covering the Michigan communities of Pellston and of Tecumseh has just been published as Special Bulletin No. 377 of Michigan State College. Copies may be obtained by writing Charles R. Hoffer and Clarence Jane, Department of Sociology and Anthropology and Social Research Service, Michigan State College, East Lansing.



Brand of theobromine-calcium salicylate,
Trade Mark reg. U. S. Pat. Off.

For the Failing Heart of Middle Life
Prescribe 2 or 3 tablets of Theocalcin, t. i. d. After relief is obtained, continue with smaller doses to keep the patient comfortable. Theocalcin strengthens heart action, diminishes dyspnea and reduces edema.

Bilhuber-Knoll Corp. Orange, N. J.



Michigan's declining tuberculosis mortality and continuing high morbidity are typical of the current trend throughout the United States, as well as in other countries of the world where records are available. Evidently, the treatment of tuberculosis is proving more effective than efforts for preventing the disease.

Referring to eradication as the objective in the effort against tuberculosis, David A. Cooper, M.D., president of the American Trudeau Society, writes: "While unknown cases are living in the community, the treatment of known cases is a weak gesture." Michigan's share of the nation's 150,000 unknown active cases of tuberculosis is about 6,000.

MICHIGAN TUBERCULOSIS ASSOCIATION

Wayne University College of Medicine has just received a special research grant in organic chemistry and natural products from Schenley Laboratories, Inc. The grant is for \$4,500.

* * *

The graduate fortnight (25th) of the New York Academy of Medicine will be held at 2 East 103rd Street, New York City, October 6-17, 1952. This year's subject is "Hormones in Health and Disease." For program and application blank, write the Committee on Medical Education, 2 East 103rd Street, New York, New York.

Journal Covers and content for the next fifteen months in accordance with action of the MSMS Council will be dedicated to the following subjects:

1952 October	Diabetes Detection
November	Michigan Health Council
December	Michigan Clinical Institute
1953 January	Heart and rheumatic fever
February	Medico-legal jurisprudence
March	Cancer
April	Beaumont Memorial
May	Michigan Foremost Family Physician and Geriatrics
June	Michigan Medical Service
July	Annual Session
August	Roster Number
September	Arthritis and rheumatism
October	Diabetes Detection
November	Michigan Health Council
December	Michigan Clinical Institute.

* * *

Jack Rom, M.D., Detroit, is President of the Michigan Allergy Society for the year 1952-53. Donald S. Smith, M.D., Pontiac, is Vice President and Frank F. A. Rawling, M.D., Toledo, is Secretary-Treasurer.

The Executive Committee is composed of Drs. Rom, Smith, Rawling and Homer A. Howes, Sidney Friedlaender, and Joseph H. Shaffer, all of Detroit.

* * *

The Medical Advisors of the Clara Elizabeth Fund for Maternal Health of Flint, Michigan, present for the Genesee County Medical Society, obstetricians and pediatricians of Michigan, The Third Annual Fund Lec-



Vernor's

GINGER ALE

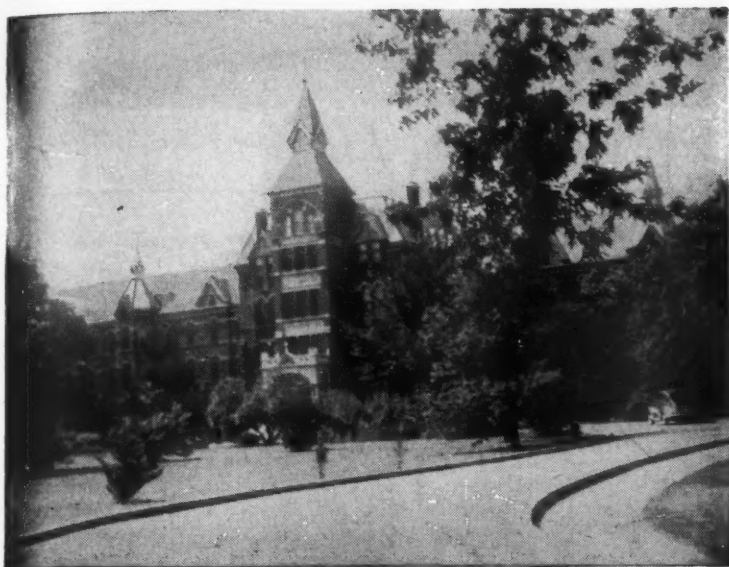
Developed by Michigan's First Registered Pharmacist
 Recommended by Eminent Michigan Physicians
 FLAVOR MELLOWED 4 YEARS IN WOOD



A PREFERRED BEVERAGE FOR HOME AND HOSPITAL

• Licensed by State of Michigan, Dept. of Mental Health • Registered by American Medical Association

ST. JOSEPH'S RETREAT



Founded in 1860

*Under direction of
Daughters of Charity
of St. Vincent de Paul*

Newly reorganized and modernized for individualized care and treatment of the nervous and mentally ill and alcoholics.

*Martin H. Hoffmann, M. D.
Medical Superintendent*

**23200 Michigan
DEARBORN • near Detroit
Logan 1-1400**

tures. These will be given on October 8, 1952, 1:30 to 5:00 P.M. at Hurley Hospital, Flint.

Speakers and topics are as follows:

Chairman, ERNEST WATSON, M.D., Associate Professor of Pediatrics, University Hospital, Ann Arbor, Michigan.

"Mid-Pelvic Contractions"—WILLIAM F. MENGERT, M.D., Professor and Chairman of the Department of Obstetrics and Gynecology, Southwestern Medical School of the University of Texas, Dallas, and Chairman, Department of Obstetrics and Gynecology, Parkland Hospital, Dallas.

"Maternal and Neonatal Care"—JOHN PARKS, M.D., Professor of Obstetrics and Gynecology, George Washington University School of Medicine, Washington, D. C.

(Topic to be announced)—LOUIS K. DIAMOND, M.D., Associate Professor of Pediatrics, Harvard Medical School, Boston, and Senior Physician, Children's Hospital, Boston.

* * *

D. Hale Brake, Treasurer of the State of Michigan, was recently made an Honorary Member of the Ionia-Montcalm County Medical Society. In the letter of appreciation to Mr. Brake, the Ionia-Montcalm Medical Society stated: "We hold in high regard the integrity, honesty and efficiency that you have demonstrated in the performance of your public office."

Congratulations, State Treasurer Brake!

The Processing Department of the Michigan State Medical Society is not often heard from—but it is a very busy place in the new "home" of the Michigan State Medical Society at 606 Townsend, Lansing.

For example, a total of 174,373 pieces of mail were processed through the MSMS addressograph from January 1 to July 24, 1952.

* * *

Hoover Assails Give-Away Programs.—Herbert Hoover was given a big hand when he mentioned socialized medicine in connection with the government's give-away programs before the Republican national convention in Chicago.

"Behind this plush curtain of tax and spend, three sinister spooks or ghosts are mixing poison for the American people," he said. "They are the shades of Mussolini, with his bureaucratic fascism; of Karl Marx, and his socialism, and of Lord Keynes, with his perpetual government spending, deficits, and inflation. . . .

"If you want to see pure fascism mixed with give-away programs, take a look into the Brannan plan.

"If you want to see pure socialism mixed with give-away programs, take a look at socialized medicine and socialized electrical power.

"These things do not make for free men."

* * *

"The more responsibilities on a man's shoulders, the less room for chips."—Scandal Sheet.

Plainwell Sanitarium

PLAINWELL, MICHIGAN
Member American Hospital Association
EDWIN M. WILLIAMSON, M.D.
Psychiatrist-in-Chief
Professional care for the nervous
and mentally ill.
Telephone 2841



Restful Six-acre Estate Overlooking the Kalamazoo River.

DETROIT INSTITUTE OF CANCER RESEARCH

Fifth Annual Scientific Meeting

Scientific and clinical sessions will be held in the auditorium of the Engineering Society of Detroit, Horace H. Rackham Educational Memorial, 100 Farnsworth Avenue, Detroit, unless otherwise indicated.

Monday, October 20

Morning Session—10:00 A.M.

- A Commentary to the Problem of Differentiation
PAUL WEISS, Ph.D.
The University of Chicago
- Biochemical Mechanisms in Insect Growth and Metamorphosis
CARROLL M. WILLIAMS, Ph.D., M.D.
Harvard University

Luncheon—12:15 P.M.

Luncheon reservations must be made in advance by writing to the Detroit Institute of Cancer Research, 4811 John R Street, Detroit 1, Michigan.

Afternoon Session—2:00 P.M.

- The Biological Synthesis of Cholesterol
KONRAD BLOCH, Ph.D.
The University of Chicago
- On the Nature of Biosynthetic Mechanisms of Protein Synthesis
C. B. ANFINSEN, JR., Ph.D.
National Heart Institute
- Esterases of Animal Tissues
G. GOMORI, M.D., Ph.D.
The University of Chicago

Evening Entertainment—8:00 P.M.

Guests are cordially invited to an informal smoker in the auditorium of the Detroit Cancer Center, 4811 John R Street.

Tuesday, October 21

Morning Session—10:00 A.M.

- The Problem of Autonomy and Dependence of Tumor Cells
JACOB FURTH, M.D.
Oak Ridge National Laboratory
- The Considered Use of Antimetabolites
D. W. WOOLLEY, Ph.D.
The Rockefeller Institute for Medical Research

Lunch—12:15 P.M.

Afternoon Session—2:00 P.M.

- Studies on the Basic Mechanism of the Effects of Radiation on Individual Cells
ALEXANDER HOLLAENDER, Ph.D.
Oak Ridge National Laboratory

1240

Genetics and its Implications for Human Disease
LAURENCE H. SNYDER, Sc.D.
The University of Oklahoma

Wednesday, October 22

Morning Program—9:00 A.M. to 12:00
Open House at the Detroit Cancer Center

Lunch—12:15 P.M.

Afternoon Session—2:00 P.M.

- The clinical program is sponsored by the American Cancer Society, Southeastern Michigan Division.
- The Localization and Treatment of Gliomas of the Brain
LOYAL DAVIS, M.D., Ph.D.
Northwestern University Medical School
- An Appraisal of Radioisotopes in Cancer Therapy
SHIELDS WARREN, M.D.
New England Deaconess Hospital
- The Problem of Pigmented Moles and Malignant Melanoma
GEORGE T. PACK, M.D.
Pack Medical Group
- A Review of Our Most Recent Experience in the Chemotherapy of Cancer
SIDNEY FARBER, M.D.
Boston Children's Hospital

* * *

The UAW (CIO) listed its net worth at \$12,039,297 Friday [August 22], a gain of more than 50 per cent or \$4,000,000 in the past year.

The accounting was contained in the union's annual report for the year ended May 31. It was submitted by UAW Secretary-Treasurer Emil Mazey.

Slightly more than half of the net worth, or \$6,088,404 is in the union's strike fund, the Mazey report said.

It said the fund increased \$1,534,961 during the year despite strike contributions of \$1,796,255 made to 114 local unions in the 12-month period.

The union's general fund collected \$13,020,775 in per capita taxes and other receipts and spent \$10,627,267.

Among the receipts was \$255.51, which represents interest on stocks the UAW holds in corporations. Purchase of the stock entitles the union to entry in stockholders' meetings and the corporations' financial reports.

Mazey said the improved financial condition resulted mainly from the \$1 increase in dues voted at the last UAW convention in April, 1950. Members now pay

**PRESENTING
A COMPLETE,
MODERN LINE!**

- Tablets
- Liquids
- Ointments
- Capsules
- Powders
- Injectables

Tutag

**AMINOPHYLLINE NOW
COUNCIL ACCEPTED**

Another TUTAG Advance! Our Pure, White, Stable
AMINOPHYLLINE TABLETS, 1½ Grains, Now Bear The
Seal Of Council Acceptance.

• Send For New Descriptive Lists Today!





S. J. TUTAG & COMPANY
— Pharmaceuticals —
19180 MOUNT ELLIOTT AVENUE
DETROIT 34, MICHIGAN • TWinbrook 3-9802

\$2.50 a month, of which the international union receives 95 cents.

Membership in the union was listed as 1,180,284 on May 31, a gain of 134,595, Mazey said.—*Detroit Free Press*, August 23, 1952.

* * *

New Book on Health Resources in United States.—The Brookings Institution in Washington has just announced publication of a new book, *Health Resources in the United States*, which gives a factual account of the personnel, facilities, and services available to serve the nation's health. It was written under the direction of George W. Bachman, who has had 30 years' experience in the medical sciences and public health.

Three years of research, involving the review of hundreds of documents, went into the manuscript. More than 700 private and public agencies contributed materials for analysis.

* * *

British Doctors Get Pay Hike.—The 20,000 doctors under Britain's socialized medicine set-up finally received their pay increase, which will cost taxpayers nearly \$100,000,000 between now and next March. The raise, retroactive to the start of the socialized medical service in 1948, represents an average payment to each doctor of nearly \$5,000.

The raise came after the doctors threatened to leave the scheme high and dry last year.

Doctors at present earn \$1.70 a year for every patient on their books, and they can have 4,000 patients.

SEPTEMBER, 1952

The average, however, is 2,300. The increase will mean about \$1,500 more yearly.

* * *

The Committee for the Nation's Health has circularized to physicians a brochure listing leaflets, pamphlets and bulletins which it claims will "help to win the fight to take the price tag off good health for everyone."

For the information of the medical profession, generally, here is the list of officers and members of the board of directors.

Chairman: Dr. Channing Frothingham, past president of the Massachusetts Medical Society.

Secretary: Walton Hamilton.

Treasurer: Morris Llewellyn Cooke.

Honorary Vice-Chairmen: William Green, Bishop Francis J. McConnell, Philip Murray, Bishop G. Bromley Oxnam, Mrs. Franklin D. Roosevelt, Gerard Swope, Walter Wanger.

Chairman, Executive Committee: Michael M. Davis.

Executive Director: Frederick E. Robin.

Board of Directors: Channing Frothingham, M.D.; Viola W. Bernard, M.D.; James A. Brownlow; Morris Llewellyn Cooke; Paul B. Cornely, M.D.; John J. Corson; Michael M. Davis; Albert W. Dent; John Edelman; Frank F. Furstenberg, M.D.; Arthur Goldberg; Harry Goldblatt, M.D.

John Gunther; Walton Hamilton; Henry Kaiser; Mary Dublin Keyserling; John A. Lapp; Joseph Meyer, M.D.; Newbold Morris; Dorothy Norman; James G. Patton; Eric Peterson; Jacob Potofsky; Harry Read.

Say you saw it in the *Journal of the Michigan State Medical Society*

SAMMOND PLEASANT LODGE

Offers to the elderly and chronically ill

Peace and quiet. Freedom of a large and richly furnished home and acres of lawns and wooded rolling grounds, scientifically prepared tasty meals, congenial companionship. A real

"Home away from Home"

Approved by the American Medical Association and Michigan State Department of Social Welfare—Highly recommended by members of the Medical Profession who have had patients at the Lodge.

For further information write to:

SAMMOND PLEASANT LODGE

124 West Gates Street

Romeo, Michigan

THE
MEDICAL PROTECTIVE
COMPANY
FORT WAYNE, INDIANA

Professional Protection
Exclusively
since 1899

DETROIT Office:
George A. Triplett, and
Richard K. Wind, Representatives,
203 Medical Arts Bldg.
13710-14 Woodward Ave.
Telephone Townsend 8-7980

Emil Rieve; Samuel I. Rosenman; Theodore M. Sanders, M.D.; Max Seham, M.D.; Robert E. Sherwood; Boris Shishkin; Wayne Chatfield Taylor; Robert F. Wagner, Jr.; R. M. Walls, D.D.S.; Lester Washburn; Hubert Will; Matthew Woll.

* * *

Your Reference Committee on Medical Education and Hospitals commends the excellent report of Dr. Elmer L. Henderson, President of the American Medical Education Foundation. Your Reference Committee believes that the American Medical Education Foundation deserves and should have the unqualified support of all members of the American Medical Association. Many of the constituent state medical societies have set up committees for the collection of funds from their members in addition to making a substantial contribution to the Foundation from their own funds. Your Reference Committee urges that similar committees be formed in the state societies where this has not been done. The large sums collected by some state and county medical societies is an indication of what can be accomplished when the importance of this laudable undertaking is brought to the attention of each individual member of the Association. Your Reference Committee believes that those who adhere to the basic concepts of democracy should support the tenets of democracy not only with words but with deeds.—Report of AMA Reference Committee on Medical Education and Hospitals, adopted by AMA House of Delegates on June 11, 1952.

* * *

New hospital projects authorized by the Division of Civilian Health Requirements, Federal Security Agency, for construction under the controlled materials plan, during June, 1952, included an addition of 42 beds to Mercy Hospital, Muskegon, at an estimated cost of \$1,621,000 and an addition to the laundry of Pennekamp Hospital, Hastings, at an estimated cost of \$315,000.00.

* * *

The President's Commission on the Health Needs of the Nation has been holding hearings on voluntary-compulsory insurance. These included meetings in Philadelphia, Houston, Raleigh, Minneapolis, St. Louis, Cleveland, San Francisco and Detroit. The last named meeting was held September 23.

* * *

A new GI bill for veterans who served in the armed forces since the start of the Korean conflict on June 27, 1950 provides five benefits, to assist veterans in their return to civilian life. Included are education and training; guaranteed or insured loans for homes, farms and businesses; unemployment compensation; mustering-out pay, and job-finding help. For detailed information, write Veterans Administration Information Service, Washington 25, D. C.

* * *

The American Goiter Association offers the Van Meter Prize Award of \$300 and two honorable mentions for the best essay submitted concerning original work on problems related to the thyroid gland. The Award will be made at the Annual Meeting of the As-

a prescription for you, doctor!

Busy as you are caring for your patients, it's all too easy to postpone the improvements that are so important to you and your practice. And yet, when new equipment makes your offices more inviting and you more productive, don't you lose a lot by waiting?

modernize overnight

You can replace your present equipment with any of three beautiful, efficient Hamilton suites without the slightest interference in your schedule. Then, change draperies and wall decorations as time permits. Hamilton examining tables have 28 separate features to conserve your time and energy. Don't wait—find out now how improved Hamilton equipment can work for you.



Hamilton Nu-Tone Suite . . . the Finest Medical Furniture

NOBLE-BLACKMER, INC.

Surgical Supply Center

267 W. Michigan Ave.

Jackson, Michigan

sociation in Chicago, May 7-8-9, 1953. For information, write George C. Shivers, M.D., Corresponding Secretary, Colorado Springs, Colorado.

* * *

"Can we conquer polio now?" is the title of an article by Wm. A. Lydgate, published in *Today's Woman*, August, 1952. Among the conclusions are that "polio is spread by human filth and carelessness, not by rats or mice, or by droplets in the sneeze of a polio patient, by crowded schools or swimming pools."

* * *

H.R. 7800.—Before its adjournment on July 7 Congress left this controversial old age pension bill a confused jumbled wreck on the legislative shores, according to George F. Lull, M.D., Secretary of the AMA. The House adopted the controversial Section 3 which provided for the establishment of Administrative machinery to determine permanent and total disability among potential beneficiaries under the Old Age and Survivors Insurance provisions of the Social Security Act. The Senate eliminated this Section. Then the Conference Committee came up with a most confusing compromise: provision is made that no application shall be accepted prior to July 1, 1953. However the final sentence of the Section provides that all of the provisions included therein shall cease to be in effect as of June 30, 1953. The net result of this anomalous working is to provide for an expiration date of the section on the day preceding the acceptable date for receiving applications.

It is clear that further legislative action must be

taken before such provisions can be adopted into permanent law. Under the present Act, Congress has merely written a memorandum to itself suggesting that hearings be held on this matter early in 1953!

* * *

"Ten Ways to Ruin a Practice" is the title of a searching editorial published in the *Detroit Medical News* of May 26 and written by Wm. S. Reveno, M.D., Detroit. Here are a few of the listed practices "that can ruin any practice":

1. Disappearing whenever the mood strikes us and otherwise making ourselves as unavailable as possible.
2. Making no pretense about keeping appointments and keeping patients waiting in the belief that they will thus appreciate us more.
3. Prescribing by ear and without regard to cost, not taking the time to diagnose or to plan treatment beforehand.
4. Being as impersonal as possible and brushing patients off quickly so they can't ask questions.
5. Sparing no one's feelings in discussing prognosis—giving it to 'em straight and walking off.
6. Failing to plan for patients who are hospitalized, and having no regard for the length of stay or its cost.
7. Labelling the problem patient a neurotic and punishing him if he fails to respond to treatment.
8. Blowing our tops often to impress the patient with our maturity.
9. Keeping no records but relying solely on memory.
10. Charging all the traffic will bear.

THE DOCTOR'S LIBRARY

Acknowledgment of all books received will be made in this column, and this will be deemed by us as full compensation to those sending them. A selection will be made for review, as expedient.

THE STORY OF THE ADAPTATION SYNDROME
(Told in the Form of Informal, Illustrated Lectures).
By Hans Selye, M.D., Ph.D. (Prague), D.Sc. (McGill), F.R.S. (Canada), Professor and Director of the Institute de Medicine et de Chirurgie experimentales Universite de Montreal. Complimentary Copy. Montreal, Canada: Acta, Inc., Medical Publishers, 1952. Price \$4.50.

The author has compiled another collection of his findings—the result of research and experimentation. He presents this material in the form of seven lectures. These lectures are another attempt to explain and elucidate the author's theories regarding his concepts on the general adaptation syndrome reaction to stress. He presents his methods of animal experimentation to show the importance of the endocrine glands in this adaptation mechanism. He discusses the diseases of adaptation, the clinical uses of adaptative hormones and the animal effects of hormonal overdosage. The seventh chapter is devoted to a general summary and outlook in which the author presents his own views.

"The author admits that there are many investigators who disagree with some of his concepts, and there are divergent points of view and schools of thought which advocate different possibilities of interpretation." These are admissions that the author has included in this

volume. The reader may draw his own conclusions regarding the value of these concepts. To get an over-all view of this subject in an easily read volume, this book meets its requirements.

G.K.S.

SURGERY AND THE ENDOCRINE SYSTEM—Physiologic Response to Surgical Trauma—Operative Management of Endocrine Dysfunction. By James D. Hardy, M.D., F.A.C.S., Assistant Professor of Surgery University of Tennessee Medical College. Illustrated. Philadelphia: W. B. Saunders Co., 1952. Price \$5.00.

Dr. Hardy states he hopes to accomplish two objectives in writing this monograph. First he wishes to outline the mechanism by which the patient survives injury and to clarify the way in which the pertinent newer advances in physiology affect surgical care. Secondly he wishes to present facts and procedures related to the surgical management of disease of the endocrine glands. Material of much practical value will be found in chapters seven to eleven. In these chapters the author reviews the surgical problem related to the thyroid, parathyroid, pancreas, adrenals, pituitary, thymus, ovaries and testes. However, no attempt is made to portray operative technique in detail. The bibliographies at the end of each chapter are excellent. This book is recommended to the busy general surgeon.

JWH

BACITRACIN—A Review and Digest of the Literature Up to and Including January, 1952. New York: Research Division S. B. Penick & Co., 1952.

This book makes available to the pharmaceutical industry and the medical profession a review of the data which has accumulated on the clinical usefulness of bacitracin and to direct attention to the wide potential of this drug based upon its known synergistic action with other antibiotics. Bacitracin may be administered parenterally and when employed under proper hospital supervision is a life-saving drug.

Bacitracin antibacterial spectrum closely resembles that of penicillin. It has been shown to be effective in pyogenic skin infections, acute and chronic amebiasis, open wounds, eye infections, nasal infections, dysentery, and widespread systemic staphylococcal and certain streptococcal and pneumococcal infections.

G.W.S.

All important laboratory examinations; including—

Tissue Diagnosis
The Wassermann and Kahn Tests
Blood Chemistry
Bacteriology and Clinical Pathology
Basal Metabolism
Aschheim-Zondek Pregnancy Test
Intravenous Therapy with rest rooms for Patients
Electrocardiograms

Central Laboratory

Oliver W. Lohr, M.D., Director

537 Millard St.
Saginaw

Phone, Dial 2-4100—2-4109

The pathologist in direction is recognized
by the Council on Medical Education
and Hospitals of the A. M. A.

FREE: BI-MONTHLY REVIEWS OF LATEST MEDICAL BOOKS

Ask to have your name placed on our mailing list to receive this booklet every other month!

DETROIT TEXTBOOK STORES, INC.

143 E. Elizabeth St. Detroit 1, Michigan
(Downtown in Red Cross Bldg.)
WOODWARD 5 6914

Specialists in Medical & Nursing Books

A STEP FORWARD IN HAY FEVER THERAPY

ALMEHIST offers a three way attack against hay fever and nonseasonal allergies. ALMEHIST contains a potent, well tolerated antihistamine of low toxicity plus alkaloids that inhibit glandular secretions of the nose, pharynx and bronchi. d-Amphetamine sulfate is added into the ALMEHIST formula to offset the sedative side effects that occur in susceptible patients.

EACH CAPSULE CONTAINS:

Pyrilamine Maleate	50 mg.
Hyoscine HBr	.016 mg.
Hyoscyamine HBr	0.08 mg.
d-Amphetamine Sulfate	1.5 mg.

ALMEHIST
MEYER CHEMICAL CO.
Detroit 24, Michigan

MAN TO MAN. By Bernard N. Ward, C.P.A. Illustrations and Jacket by Rodolphe LaRiviere. Caldwell, Idaho: The Caxton Printers, Ltd., 1952. Price \$4.00.

The author, Mr. Ward, is a Certified Public Accountant in Bay City, whom the editor met when addressing the Lions Club. The book was in process at that time, and we have anticipated reviewing it for about four months. The book is well bound, well printed volume, set in large, easily readable type. We confess we were unwilling to lay the book down until it was finished, which we cannot say for many volumes. The author pictures the income tax problem from the payer's standpoint, from the CPA's standpoint, and also from the standpoint of the collector. He refers back to the time before the amendment to the Constitution which allowed an income tax. He reminds the reader of the promises that the tax would be assessed only on a comparatively few well-able-to-pay persons, but now it has expanded as such things have a tendency to do until it covers practically every working person, and the tax instead of being nominal promised never to exceed one per cent, is now in the neighborhood of 30 per cent of income.

Mr. Ward describes the uncertainty and sometimes impossibility of the taxpayer learning how much his tax actually is, and that sometimes not until years later. He pictures the embarrassments, the unrelenting searching for facts and figures, the actual witch hunt of government in trying to find some more to tax. He has seen the problem from both sides in his official capacity. He

calls attention to the fact that all of us are concerned with how much we have to pay, but almost never know what becomes of the tax money, how it is spent, or wasted. Government builds more bureaucracies to collect the tax. The administration of the program is wasteful, inefficient, and employs an army of nonproducing persons who are parasites on the public, as is every non-producer.

Mr. Ward advocates repeal of the income tax laws, and repealing of the amendment. He has a proposal that sounds good. It would eliminate hundreds of thousands of federal employees, and therefore would not have to produce anywhere near so much revenue. Every income taxpayer should read this book, and form his own opinion.

VOCATIONAL SERVICES FOR PSYCHIATRIC CLINIC PATIENTS. By Thomas A. C. Rennie, M.D., Cornell University Medical College and The New York Hospital and Mary F. Bozeman Rehabilitation Project National Association for Mental Health. Published for the Commonwealth Fund. Cambridge, Massachusetts: Harvard University Press, 1952. Price \$1.25.

This booklet is a statistical report which was begun by the National Association for Mental Health in the study of vocational needs of psychiatrically handicapped patients and published in 1950. To further these studies there was an extension of the enquiries to a group of psychiatric patients who had only received treatments in

THE DOCTOR'S LIBRARY

Out Patient Clinics. The clinics selected were from several New York hospitals and the Jackson, Michigan, Mental Hygiene Clinic in conjunction with various vocational agencies.

This study is an exploration of the extent to which patients presented vocational problems and of the ways in which clinics and vocational agencies can work together. An attempt has been made to show how these agencies can function more fully together. It also points out the need for research aid the accumulation of further research.

G.K.S.

NEW AND NON-OFFICIAL REMEDIES 1952, containing descriptions of the articles which stand accepted by The Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1952. Issued under the direction and supervision of The Council on Pharmacy and Chemistry, American Medical Association. Philadelphia: J. B. Lippincott Company, 1952. Price \$3.00.

New and Non-Official Remedies is a book published annually for many years by the American Medical Association, containing descriptions of the articles accepted by The Council on Pharmacy and Chemistry of the Association as of January 1 of each year. The books are gradually increasing in size and in volume, being a ready reference for the practitioner who desires to be sure his remedies are properly tested and proven.

DYNAMIC PSYCHIATRY. Transvestism-Desire for Crippled Women. Volume Two. Louis S. London, M.D. New York: Corinthian Publications, Inc., 1952.

This is the second volume of what appears to be the author's presentation of "dynamic psychiatry." The entire small volume is devoted to the dynamics of one patient who presented three component deviations in transvestism—dressed as a woman, practiced shoe fetishism, and had a pathological interest in crippled and deformed women. The second part of this small volume is devoted to fifty drawings of his "fantasy life." The first part is a short chapter on anthropological and historical writings on this subject.

Unfortunately, this book appears to lack anything more than a superficial exposition on this one form of sexual deviation. The adolescent style of drawings are redundant, and one can question the conclusions drawn by the author regarding his case report.

G.K.S.

THE WOODS SCHOOLS for exceptional children . . .

FOUNDED IN 1913

Our function is to train and educate the exceptional child and to help him and his parents find a reasonable adjustment in accordance with individual capacities and needs.

Special treatment prescribed by the family physician, pediatrician, psychiatrist, or consultant faithfully followed, with reports submitted regularly.

Send for literature and catalog.

THE WOODS SCHOOLS

Langhorne 19, Pa.

Mollie Woods Hare, founder

Classified Advertising

\$2.50 per insertion of fifty words or less, with an additional five cents per word in excess of fifty

ATTENTION: Draft-exempt Residents: partner wanted immediately. Surgical preceptorship with potentially unlimited privileges in own 100-bed Detroit hospital. Retirement anticipated. Optionally, may purchase modern home-office with part of earnings. \$15,000 minimum take-home first year. WEBster 3-1395. 13503 Northlawn, Detroit 4, Michigan.

PHYSICIAN WANTED: Physician who is especially interested in public health or pediatrics is wanted for full-time work in the Grand Rapids School Health Program. Regular hours, job stability, interesting and challenging work. For further information, contact Dr. W. B. Prothro, City Health Department, Grand Rapids, Michigan.

WANTED: Location, or will consider association with older doctor wishing to retire shortly by doctor with three years surgical residency training who does surgery and general practice. American graduate, Protestant. Licensed in Michigan. Reply, Box 20, 606 Townsend Street, Lansing 15, Michigan.

LOCATION WANTED: Dermatologist, well qualified, seeks location or association. Reply, Box 19, 606 Townsend Street, Lansing 15, Michigan.

WANTED: To contact medical man who is farming or wishes to go into farming and needs a man to work farm on salary-share basis. Can furnish good reference. Contact, Box 18, 606 Townsend Street, Lansing 15, Michigan.

Coronary Thrombosis: In a "Medical Memo" by Roger Sterling in *Stag*, August number, the following statistic is mentioned: "Ninety-six per cent of coronary thrombosis victims under forty are male. Of these, the majority are the muscular type of men."

In Lansing

HOTEL OLDS

Fireproof

400 ROOMS